AMERICAN

AUGUST · 1958

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

In This Issue:

Animated Film Techniques—Part 2

Movie Systems In The Future

Fastest 35mm Film Processor

[illegible] Seavey ASC [illegible] phone [illegible] launching at Florida

35c

FOREIGN 45c

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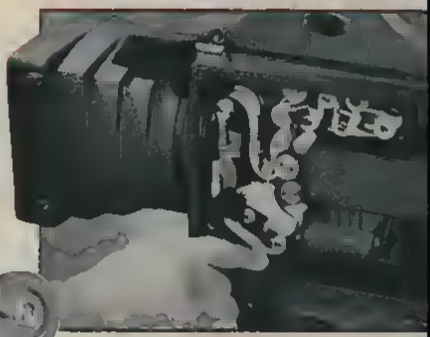

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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

JAMES J SEELEY, A S C, (lower left) and RCA camera crew prepare to photograph a pre-launch checkout of a Convair Atlas Intercontinental Ballistic Missile at the Air Force Missile Test Center, Cape Canaveral, Florida. RCA camera crews operate all engineering and documentary cameras on the missile test range as a contractor to the Air Force. Camera being readied by operator James Patrizio and 2nd cameraman Calvin Bennett is 35mm Mitchell —*Photo by Jim McNearny.*

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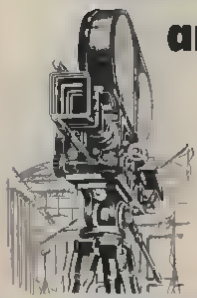
Mitchell Professional Accessories extend 16mm and 35mm camera use



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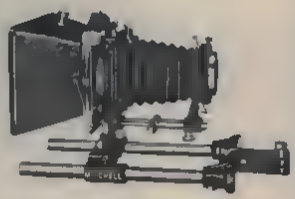
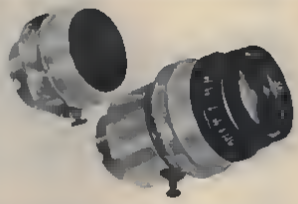


MATTE BOX AND SUNSHADE

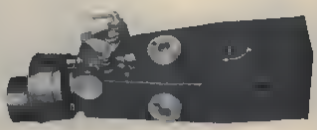
2 SPEED GEAR HEAD

FRICTION TILTHEAD AND TRIPOD

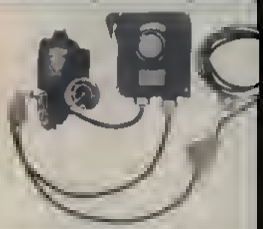


LENSES AND LENS MOUNTS

BLIMPS



VIEW FINDERS



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INDUSTRY NEWS

News briefs of industry activities, products and progress

Vidao tape recording (VTR) is gain ing momentum As with other changes that periodically take place in the motion picture industry, VTR is being weighed, evaluated, and discussed in various quarters according to the effects and/or results—good or bad—it holds for those considering it

VTR, the system of electronic record ing of pictures and sound on magnetic tape, has been a long time in develop ment. The past year has seen it make great strides It now is in actual prac tical use in the production of some TV programs and TV commercials.

Questions posed by VTR are: Will it replace photography in entertainment motion pictures? If so, how soon? Most immediate threat is in the field of TV film production, where VTR could replace film photography of half-hour video programs Some independent TV stations (i.e., those not allied with national networks, such as NBC and CBS) are taping several of their live program originations with view of syndicating same among other tape-equipped independents

Any effect of VTR on theatrical film production still appears long away off. But refinements and improvements in system could change this at any time Biggest obstacle here has been difficulty in editing video tape; but this is being overcome Even special effects in VTR is now an easy accomplishment, engineers say

Film laboratories would be the first to feel any general swing to VTR, especially if it were to take over TV film program production When and if this happens, cinematographers, too, will be hard hit. Over 50% of Hollywood's cameramen are engaged in TV film photography

The general recent trend of VTR is reflected in the following excerpts from Hollywood's two leading industry trade papers:

"There are no problems in the editing or splicing of tape anymore You watch it on the monitor and make notes, then edit In time, you'll be able to insert a beep in the tape where you want changes . . RCA filmed a 60-min. color commercial which cost $17,000. Same show on tape would cost $5,000." (Leo Guild, *Daily Variety*, June 13th)

"Networks may become a major factor in television commercial production as a natural consequence of their work in video tape. . . . CBS TV has already set up a commercials-on-tape service at CBS Television City (Los Angeles) and NBC intends to do the same . . . CBS has taped commercials for Pet Milk, Socony-Mobil Oil, Ford and Remington"—(*Daily Variety*, June 25th)

"CBS TV producer Dominick Dunne . . forsees the day when live drama producers will utilize natural exteriors, via pre-taping (by VTR), as extensively as film producers do (film) as a matter of course" (*Hollywood Reporter*, July 2nd.)

"First three segments of a video-taped series . get underway at KTTV Studios today, and will be offered to VTR-equipped stations on a national syndication basis." (*Hollywood Reporter*, July 18.)

"'We're not now, nor forever after just a film organization. Anyone in the television industry has got to be interested in VTR'" (Statement by Screen Gem's Harry Ackerman to Leo Kovner, *Hollywood Reporter*, July 18.)

"Network (CBS) is now taping practically all commercials, which results in a saving of 50% over previously used filmed method, and a need for fewer engineers" (*Hollywood Reporter*, July 23.)

"While present video tape doesn't offer adequate pictorial quality for theatrical exhibition, it's possible that within five years electronic developments may bring VTR into theatrical feature film field. . . On production end, electronic filming won't particularly change production techniques or crew size, but substantial savings are possible in time Especially, instant viewing feature of tape will cut down on call-back retakes" (*Hollywood Reporter*, July 24)

• • •

In Los Angalas' Fairfax High School, on July 7th, the second annual Motion Picture Industry Workshop opened under sponsorship of Hollywood's Motion Picture Industry Council in cooperation with the City's schools Speakers were leaders from various technical and executive branches of industry.

Representing the cinematographers were directors of photography Stanley Horsley, A.S.C. and Hal Rosson, A.S.C Latter spoke on functions of the cinematographer, his crew, and his equipment in the production of feature films. Horsley detailed various aspects of special effects. ■

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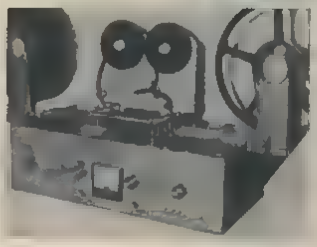

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2—Series 1 4" lenses, with adapters (New)
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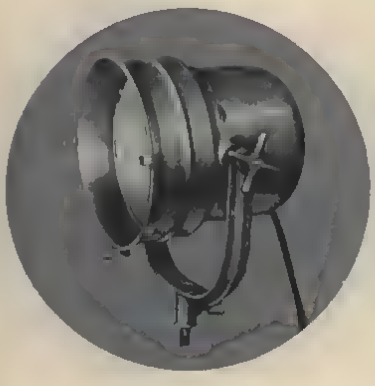

Colortran Grover Masterlite Convertable—
The newest in professional lighting. Holds either PAR 56 or PAR 64 Bulbs in a PYREX SEALED BEAM unit. Weighs only 5 lbs. and equals performance of a 5000 watt bulb with just a PAR 64 500 Watt and converter. Consumes less than 10 amperes current at 3200° Kelvin!
$42.50 with PAR 56 Bulb
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Arriflex 16
The most versatile professional 16mm camera in the world. Includes three-lens DIVERGENT turret, registration pin movement, side pressure roll, and quickly interchangeable motors. Has a mirror reflex system to permit viewing and focusing through taking lens while camera is in operation. Viewfinder shows parallax-corrected right-side-up image. Accepts 100 ft. daylight loading spools and accessory 400 ft. magazines.

Maurer 16mm Camera
A professional camera with features that cameramen dream about. High-powered direct view focus largest erect-view viewfinder ever made controls and indicators conveniently placed, clear glass reticle permits greater magnification. Incorporates a revolutionary intermittent movement that produces perfect registration

CECO Aluminum Split Apert Reels— Nonmagnetic—

A fast and inexpensive way to wind film from reel to core, or reel to reel. Threaded core for quick locking. New low prices.

16mm reel: 400' – $3.75 1200' – $6.30
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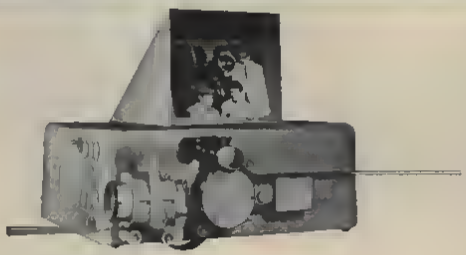
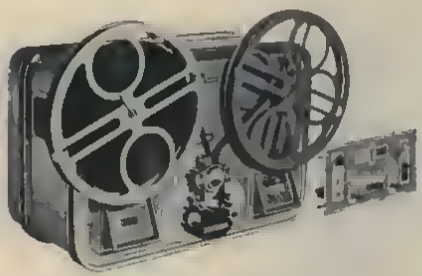
You owe it to your career as a film maker to use CECO service for sales, rentals, repairs—and experience.



35MM Professional Film Viewer—

Makes film editing a breeze- Easy threading, portable, will not scratch film Enables editor to view film from left to right on large 6" x 4½" brilliantly illuminated screen Sound Reader and/or Counter can be easily attached Available in 16mm model 35mm PROFESSIONAL FILM VIEWER **$500.00** 16mm Model **$350.00**,



Magnesync Magnephonic Sound Recorder Mark IX—

The perfect answer to the needs of *every* film producer, large or small It is compact, lightweight and distortion—free. Academy & SMPTE Specification No royalties 16mm, 35mm & 17½mm models available.

Professional Jr.* Tripod on CECO 3-Wheel Collapsible Lightweight Dolly—

The *newest* PRO JR. Tripod features super smooth action and simple camera attaching method, telescoping pan handle with adjustable angle, special pan tension knob, cast in tie-down eyelets; self-aligning double leg locks.

Price $150.00

The 3 WHEEL DOLLY collapses into compact shape The JUNIOR weighs only 15½ lbs, the SENIOR weighs 18 lbs Any tripod can be easily attached. Ball bearing, locking rubber tired casters with indexing device.

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WHAT'S NEW

. . . in equipment, accessories, services

Electronic Megaphone

Camera Equip. Co., New York, N. Y., announces the Pye Transhailer, a light weight electronic megaphone that is ideal for use by motion picture directors on location. Powered by standard flashlight batteries, overall weight is only 5 lbs. Power output is 3½ watts. Megaphone is completely self-contained, with speaker, amplifier, batteries and microphone encased in the rugged unit. List price is $99.00.

300mm Telephoto

Century Precision Photo Equip. Co., 10659 Burbank Blvd., No. Hollywood, Calif., announces a new 300mm f/4.5 telephoto lens in precision focusing mount for 16mm Pathe, Bolex, Bell & Howell, Revere, Cine Kodak, and Arriflex cameras. Lens features extreme light weight—only 24 oz.—high apochromatic resolving power, with full 12-power magnification. All optical surfaces are coated and fully color-corrected. List price is $159.50.

Fishpole Mike Boom

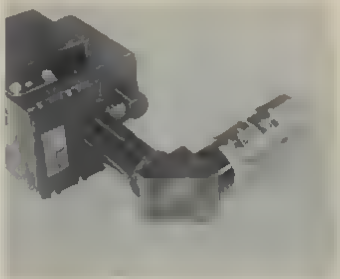
Cinekad Engineering Co., 500 W. 52nd St., N. Y. 19, N. Y., announces a new telescoping fishpole microphone boom with boom extension range to 12 feet. Monopod accessory enables operator to handle boom for long periods without fatigue. Mike cable is placed inside tubular boom to eliminate noise and facilitate quick and easy operation. For complete data and price, write manufacturer direct.

Film Cue Punch

Neumade Products Corp., 250 W. 57th St., N. Y. 19, N. Y., announces a film cueing punch for 16mm film that marks three consecutive frames of film at a time. Cue marks are so located that they are exactly superimposed during projection. Guide pin in punch insures accuracy in placement of cue mark. For use with TV films, cue mark is located within scanned area of the monitor but outside area reproduced on home receiver. Trade-named Neucue, it sells for $29.50.

Right-Angle Lens Mount

A new periscope attachment which permits "around-the-corner" photography with any 16mm camera is available from Traid Corp., Encino, Calif. Tradenamed the Fotoperiscope, it rotates a full 360° and may be locked in place at any angle by a knurled ring. Built-in crosshairs can be adjusted and locked in a similar manner. Either "C" mount threads or the GSAP-type mounting with bolts can be provided.



Telescoping Lamp Pedestals

Mole-Richardson Co., 937 No. Sycamore, Hollywood 38, Calif., announces its Sky-Hi Folding Pedestals for use in place of parallels where it is necessary to place set lamps high when no catwalks are available. Unit is available in three sizes capable of extending to a maximum of 162 inches in height. For data sheet and prices, write the manufacturer direct.

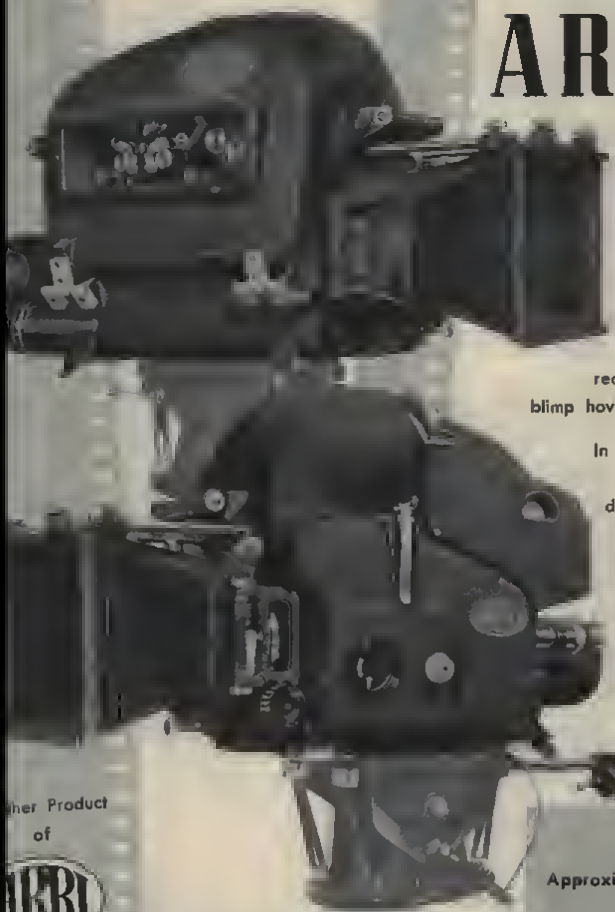
Motor Drive for Kodak K-100

PAR Products Corp., 602 Colorado Ave., Santa Monica, Calif., announces a 115 v AC electric, governor-controlled motor drive for the Kodak K-100 which operates camera at speeds of 8 to 64 fps. No camera modification is required and camera spring motor may be used alternately when desired. Complete with mounting plate and tachometer, motor weighs only 3½ lbs., extends 4½" from side of camera, is 7" in length and 2¾" in height. Data sheet and price are available from manufacturer. ■

The new, easy way to lip-synched filming, on location or in the studio is with the

ARRICORD 35

"SINGLE UNIT" DOUBLE SYSTEM PICTURE AND SOUND CAMERA



The Arricord 35 is a combination of the latest Arriflex 35mm Model IIB camera and a magnetic recording unit which uses perforated 17½mm magnetic recording film. The combined units are housed in a compact sound blimp having external controls for both sound and picture recording.

In the Arricord, the Arriflex camera component is permanently joined to the recorder unit by a special precision gear drive, which assures constant speed and smooth, even motion in the mechanisms driving both the negative and magnetic films. A 24 Volt governor controlled DC precision motor powers the entire unit.

The Arricord answers the demand for a compact and portable double system sound recording camera with the convenience, money and labor saving features of a single system camera. Because the entire unit is driven by a 24 Volt battery it eliminates the need for AC generators or inverters.

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TECHNICAL DATA

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Approximate weight of Amplifier Case	28 lbs.
Approximate weight of battery case	42 lbs.

Camera part: Same features as Arriflex 35. Three lens turret with remote follow focus and diaphragm drive. 400 ft. magazine capacity. Through the lens focusing and viewing.

Sound part: Made by Klangfilm to professional standards. Takes 450 ft. perforated 17½ mm magentic film. Two microphone inputs 200 ohms. 2 way mixing. Valve metering. Electronic slate and many other features.

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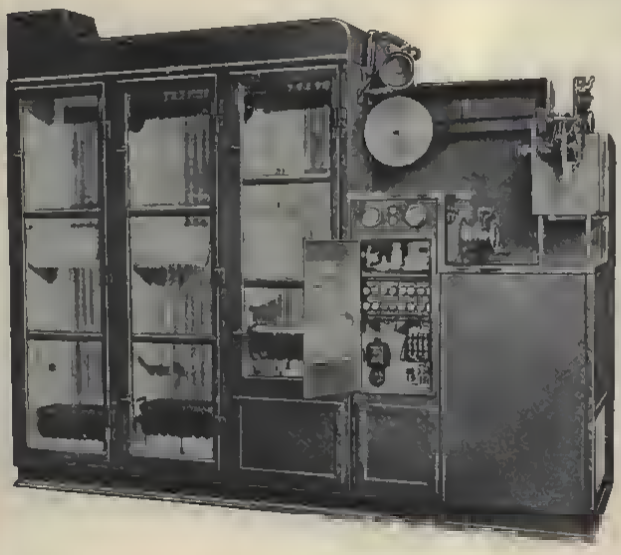

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COMPLETE WITH

8 Stainless Steel Tanks, Bottom Drains, Refrigera-tion, Recirculation, Air Pump, Dry Box, Blowers, Strip Heaters, Sprays

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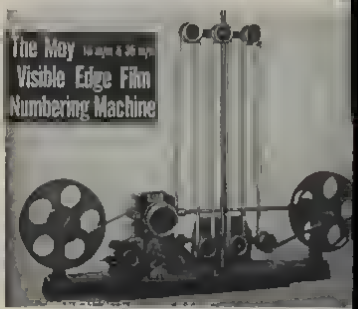

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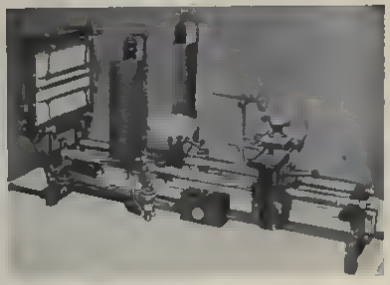

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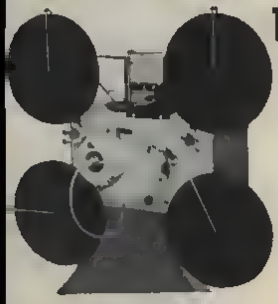

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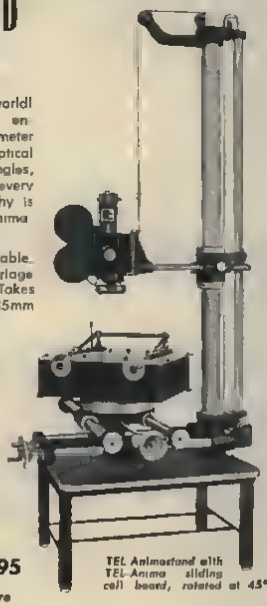

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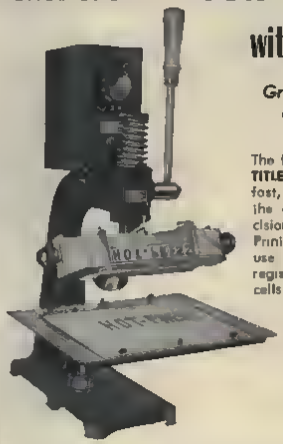

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Optical Printer Data

A new 6-page folder which gives technical design and operating details for completely coordinated optical printer units is available gratis from Animation Equipment Corp., 33 Hudson St., New Rochelle, N. Y. Well illustrated with photos and drawings, folder clearly shows how mechanical movements are accurately controlled to provide greater precision, increased range of application, and simplified setup and shooting procedures.

Equipment Catalogue

Listing over 3,000 items and containing over 500 illustrations, new 176-page catalogue just issued by SOS Cinema Supply Corp. is said to be largest and most comprehensive ever published in the industry. Listed is 16mm and 35mm studio and newsreel cameras, lenses, finders, animation and special effects equip., in fact just about every item you can name that is used in shooting, editing and printing a motion picture. Make request for free copy on your company letterhead.

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New 8-page illustrated catalogue and price sheet covering the company's line of synchronous ¼ inch magnetic recording equipment and "Sync-Kits" is available free from Rangertone, Inc., 73 Winthrop St., Newark, N. J.

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Photo Tape Digest

Brooks Institute of Photography, 2190 Alston Rd., Santa Barbara, Calif., offers a new service consisting of tape recordings containing detailed explanations of new techniques, materials, equipment and applications, as well as business procedures and many other aspects of modern professional photography, issued monthly on a subscription basis. ■

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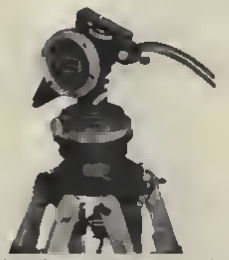

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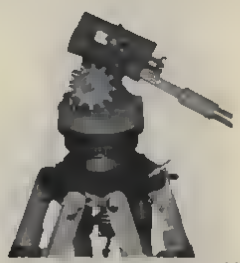

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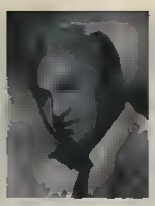

Conducted by Walter Strenge, A.S.C.

QUESTIONS relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—*Ed.*

Q When photographing store window displays with Commercial Kodachrome recently, the camera picked up my own image reflection in the glass, which did not seem apparent when I was shooting. How can this be avoided? —*A. C., Alamosa, Colo.*

Answer· Set your camera at an angle to the window instead of pointing it straight on—at about 35°. Other unwanted reflections, such as passing cars, pedestrians, etc., can be minimized by using a Pola screen in front of your lens.—*David Savitt, A.S.C.*

Q I wish to use "before the lens" mattes or masks for split-stage and other double-exposure effects. Can you give me a mathematical formula for calculating the correct distance to place masks before the lens, according to the focal length and aperture of lens used for the shot? I use an Auricon Cine-Voice camera.—*R. E. W., Hollywood, Calif.*

Answer· There is no set formula applying to the use of split-screen mattes. Some shots require a soft blend where the two exposures join together, while others need a fairly sharp matte edge.

Before making matte shots, it is important to tie down the camera securely to insure absolute steadiness. Also, make sure that the glass or matte card is firmly held in the matte box and positioned from 12" to 24" from the lens. The closer the matte is to the lens, the softer the matte line. The use of a small lens opening will sharpen the matte line, large openings soften it. It is important to remember also that the lens opening must be the same for both exposures of the split stage shot so that the overlap will be even.—*Mark Davis, A.S.C.*

Q I am interested in a top-quality anamorphic lens for use with my Bolex H-16 Reflex camera for shooting wild life and travel films. Only those lenses which give the full CinemaScope format (2.55 to 1) are of interest. While I am interested first in anamorphic lenses that will perform well on the camera, I assume the same lenses could also be used on a projector for checking purposes.

1) What, in your opinion is the best anamorphic lens to use, and what is its list price?

2) What focal length lenses can it be used with?

3) Would quality of shots made with this lens permit blowups from 16mm to 35mm for showing on standard CinemaScope screens?—*R. G. L., North Sydney, Australia.*

Answer 1) There are a number of anamorphic lenses made for use with 16mm cameras. J. D. Moeller Optische Werke, GMBH, Wedel/Holsetin, Den, W. Germany, makes a lens called Vidascope which has been known to yield satisfactory results. It lists at $169.50. The Societe Technique D'Optique et de Photographie, 125 Blvd. Davout, Paris XX, France, also manufactures a 16mm anamorphic attachment lens which yields good quality. For more detailed information about these lenses, it is suggested inquiry be made of the respective manufacturers named above.

2) This question cannot be answered categorically, because the formulae of various lenses differ somewhat. In general, anamorphic attachments are intended for use with lenses of 25mm focal length or longer. Where they are to be used with a lens of longer focal length, it is necessary to check the anamorphic coupled to the lens, observing the results at various stops and to make sure that there is no loss in the corners of the frame.

3) In general, 16mm film does not lend itself to the magnification (blow-up) required for present-day large screen exhibition. The limitations are generally not in the lenses.—*Earl Sponable, A.S.C. Associate, 20th Century-Fox Studio.*

Q When viewing a scene through the "through-the-lens" viewer on a Mitchell BNC camera, one sees a hairline on the extreme right side of the aper-

(Continued on Next Page)

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QUESTIONS & ANSWERS

(Continued From Preceding Page)

ture, also an inner square with rounded corners with cross-hairs in the center. I assume the latter represents the so-called TV frame or aperture, but it cuts off so much of the scene it hardly seems reasonable.—*P. R. N., Washington, D. C.*

Answer: You are probably using a camera having one of the earlier type etched ground glasses in the viewer. These were etched with the Academy Aperture and a TV aperture having rounded corners. These glasses had to be inserted in the BNC focus tube so that the center line of the ground glass matched the crosshairs of the focus tube. Otherwise, the etched side lines of the Academy Aperture would show right or left if not centered properly.

The TV aperture of the earlier ground glasses was much smaller than that which appears on the glasses now supplied with Mitchell cameras. The TV projector aperture is 0.612"x0.816". The etched TV aperture in the camera is smaller and allows for the loss of picture area inherent in most TV sets—caused by sets being adjusted so picture is expanded behind the tube mask. The corners are also clipped on TV sets having round tubes.—*Burgi Contner, A.S.C.*

Q I have a commitment to make a 16mm documentary film in color that is to be screened in large auditoriums and theatres. I will use two Bolex H-16 cameras with 15mm f/2.7, 25mm, f/1.9 and 63mm f/2.7 lenses. All are coated Eastman lenses and have produced sharp pictures for small home movie screens. Can this equipment produce picture sharp enough for big screen projection?—*R. R., Midland, Mich.*

Answer: 16mm footage is regularly enlarged to 35mm for theatrical projection with quite acceptable results. Films such as Walt Disney's "The Vanishing Prairie" and "The Living Desert" have been photographed wholly or in part with 16mm cameras using Eastman Ektar lenses. Therefore your Eastman lenses should be suitable for your assignment.

As there are other factors that can affect screen quality of 16mm films, it is advisable that you first check your camera for picture steadiness, as this becomes extremely critical where 16mm films are to be blown up to 35 mm. Needless to say, accurate focusing and correct exposures are a "must" where 16mm films are to be shown on large theatre screens.—*Frank Zucker, A.S.C.*

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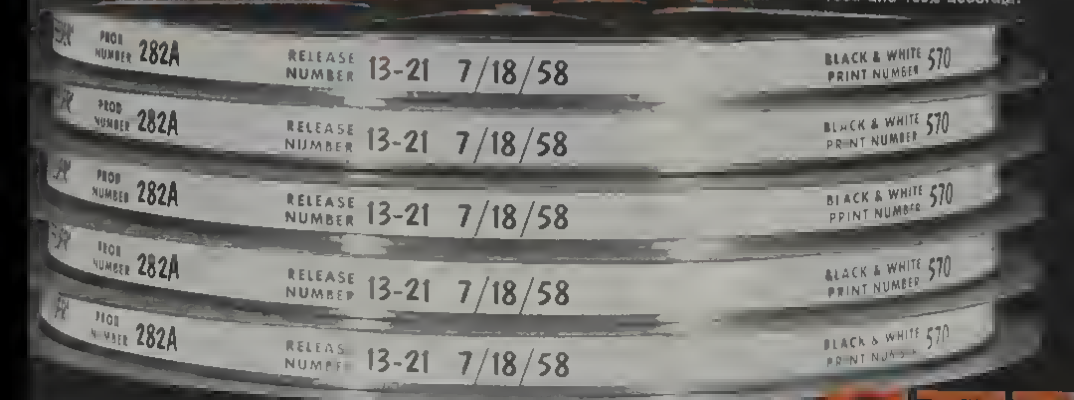

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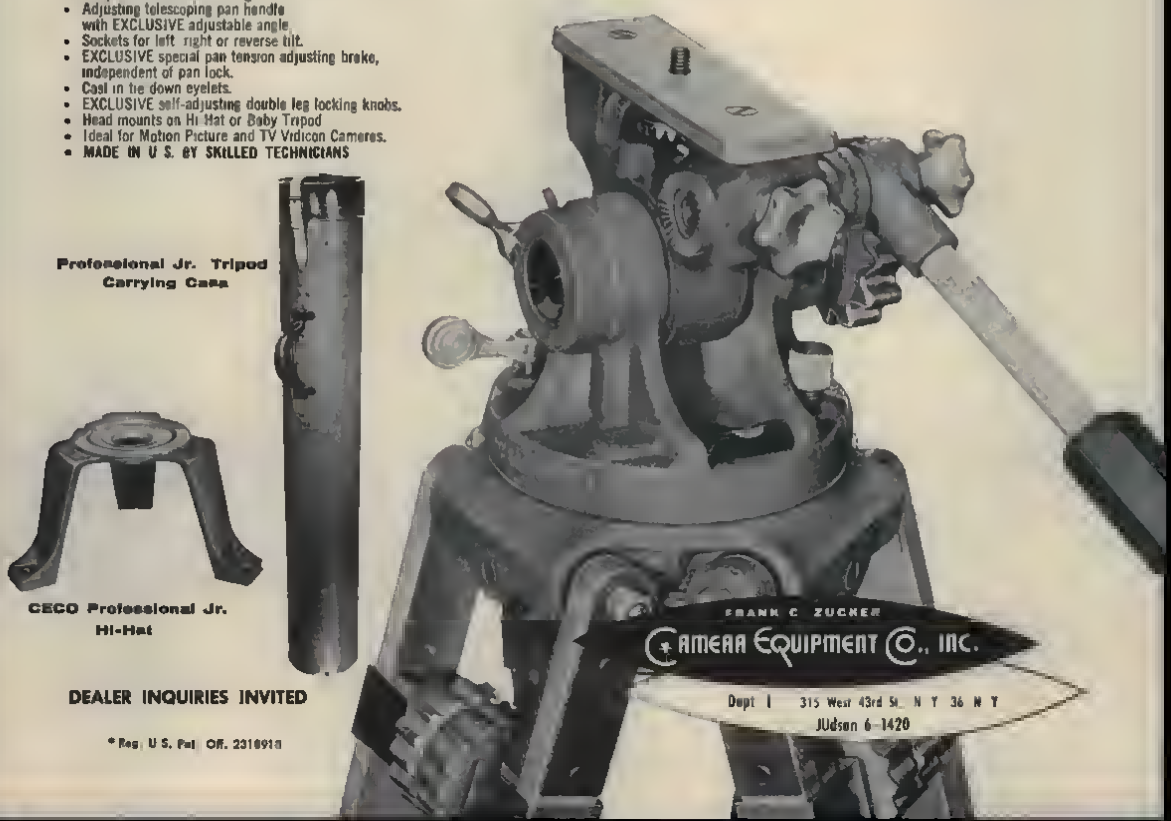

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PHOTOGRAPHIC ASSIGNMENTS

Who, where and what the industry's cameramen were shooting last month

★ *Asterisks indicate commercial and television film productions*

ALLIED ARTISTS

● Floyd Crosby, ASC, "Crime and Punishment, U S A," with George Steven Hamilton and Mary Murphy. Dennis Sanders, director.

● Ernest Haller, ASC, "Speed Crazy" (Viscount Films) with Brett Halsey and Yvonne Lime William Hale, Jr., director

AMERICAN NATIONAL

● Monroe Askins, "Bat Masterson"■ (Ziv TV) with Gene Barry. Walter Doniger, director

● Curt Fetters, "Target"* (Ziv TV) with Adolphe Minjou Sutton Roley, director. "Highway Patrol"* (Ziv TV) with Broderick Crawford Various directors

● Bob Hoffman, "Highway Patrol"■ (Ziv TV with Broderick Crawford Various directors; "Rough Riders"* (Ziv TV) with Kent Taylor David Friedkin, director, Olympia beer commercial * Derwin Abbe, director

CALIFORNIA STUDIOS

● Howard Schwartz, "Have Gun Will Travel"* (Filmaster Prods.) with Richard Boone Various directors

● Fleet Southcott, "Gunsmoke"* (Filmaster Prods.) with James Arness and Dennis Weaver. Various directors.

CASCADE PICTURES

● Roy Seawright, Kleenex and Cracker Jack commercials * George Seitz, Jr., director.

COLUMBIA

● Gene Andersen, ASC, "The Donna Reed Show"* (Screen Gems) with Donna Reed Oscar Rudolph, director.

● Kit Carson, "Father Knows Best"* (Screen Gems) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

● J Burgi Contner, ASC, "Naked City"* (Shelle Prods., Screen Gems; shooting in N Y) with John McIntyre and James Franciscus Douglas Hayes, director

● Henry Freulich, ASC, "Shirley Temple's Storybook"* (Screen Gems) with Shirley Temple Mitchell Leisen, director

● Burnett Guffey, ASC, "Gidget" (CinemaScope & Color) with Sandra Dee and James Darren Paul Wendkos, director.

● Fred Jackman, Jr., "Senior Prom" with Jill Corey and Paul Hampton David Rich, director

● Charles Lawton ASC, "Miss Casey Jones" with Doris Day and Jack Lammon Richard Quine, producer director.

● Jack Etra, second unit "Miss Casey Jones" (shooting in Connecticut).

● Irving Lippman, "Tales of the Texas Rangers"* (Screen Gems) with Willard Parker, George Blair, director

● Frank Phillips, "Jefferson Drum"* (Screen Gems) with Jeff Richardson Harmon Jones, director.

WALT DISNEY

● Gordon Avil ASC, "Zorro"* with G Williams Charles Barton, director

● Walter Castle, ASC, "John Slaughter"■ with Tom Tryon and Robert Middleton Henry Keller, director

● Loyal Griggs, ASC, "Tonka" with Sal Mineo and Fess Parker, Lewis R Foster, director

● Winton Hoch, ASC, "Darby O'Gill and the Little People" (Walt Disney Prods. for Buena Vista) with Albert Sharpe and Janet Munro Robert Stevenson, director.

● William Snyder, ASC, "Elfego Baia"■ with Robert Loggia and Robert Simon Norman Foster, director.

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 3, 1919, The American Society of Cinematographers is comprised of the leading directors of photography in the Hollywood motion picture and TV film studios. Its membership also includes cinematographers in foreign lands. Membership is by invitation only.

●

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● Harry Waxman "Third Man on the Mountain" (Technicolor, Walt Disney Prods Ltd. for Buena Vista release, shooting in Switzerland) with Michael Rennie and James McArthur Ken Annakin, director

FOX WESTERN AVE

● Lloyd Ahern, ASC, "How to Marry a Millionaire"* Various directors

● George Diskant ,ASC, "The Rifleman"* (Four Star Prods.) with Chuck Connors Various directors "Wanted Dead or Alive"* (Four Star Prods.) with Steve McQueen Thomas Carr, director

● Frank Redman, ASC, "The Perry Mason Show"* with Raymond Burr Arthur Marks director

● Guy Roe, ASC, "Trackdown"* (Four Star Prods.) with Robert Culp Donald McDougall, director

GENERAL SERVICE

● Arch Dalzell, "No Warning"* (McCadden Prods.) Jean Yarbrough, director

● Henry Sharp, ASC, "Bold Journey"* (Advenco Prods.). Leon Barsha, director.

GOLDWYN STUDIOS

● Norbert Brodine ASC, "Loretta Young Show"* (Lewislor Prods.) with Loretta Young Richard Morris, director

INDEPENDENT

● Jack Etra, Air Force Film* (color, shooting in Texas) Leonard Anderson Associates Leonard Anderson, director

● Irving Glassberg, ASC, "The Rabbit Trap" (Hecht Hill Lancaster, UA release) with Ernest Borgnine, David Brian and Bethel Leslie Philip Leacock, director.

● Sam Leavitt, ASC "Pork Chop Hill" (Melville Prods" UA release) with Gregory Peck and Harry Guardino Lewis Milestone, director

● Michael Nebbia, "Wisdom Series"* (NBC) B Cunningham, director

● Giuseppe Rotunno, "The Naked Maja" (Titanus-Metro for UA release, shooting in Rome) with Ava Gardner and Anthony Franciosa Henry Koster, director.

● John Seitz, ASC, "Man in the Net" (Mirisch Co-Jaguar Prod for UA) with Alan Ladd and Carolyn Jones Michael Curtiz, director

KEYWEST STUDIOS

● Walter Strenge, ASC, "This is the Life"* (Family Films) William Clexton, director. "This is the Answer"* (Family Films). William Claxton, director

KTTV STUDIOS

● John Martin, ASC, "Fury"* (TPA Prods.) with Peter Graves and Bobby Diamond Ray Nazarro, director

METRO-GOLDWYN-MAYER

● Stephen Dade, "The Angry Hills" (shooting in Greece) with Robert Mitchum and Elizabeth Mueller. Robert Aldrich, director

● Joseph Ruttenberg, ASC, "Green Mansions" (CinemaScope and Metrocolor) with Audrey Hepburn and Anthony Perkins Mel Ferrer, director

(Continued on Page 480)

ON THE MOVE

Motion Picture Laboratories is pleased to announce it has moved from 1672 Union Avenue to 781 S. Main Street in Memphis.

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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 473)

METRO-GOLDWYN-MAYER

● HARKNESS SMITH, "Northwest Passage"* with Keith Larsen. Jacques Tourneur, director.

● ROBERT SURTEES, ASC, "Ben Hur" (Metrocolor, camera 65; shooting in Italy) with Charlton Heston and Jack Hawkins. William Wyler, director.

● HAROLD WELLMAN, ASC, "Return to King Solomon's Mines" (CinemaScope & Metrocolor) with George Montgomery and Taina Elg. Kurt Neumann, director.

MOTION PICTURE CENTER

● HENRY CRONJAGER, "Wyatt Earp"* (Desilu Prods.) with Hugh O'Brian. Frank MacDonald, director.

● NICK MUSURACA, ASC, "The Line Up"* (Desilu Prods.) with Warner Anderson and Tom Tully. Various directors.

● JOE NOVAK, ASC, "The Walter Winchell File"* (Desilu Prods.) with Walter Winchell. Alvin Ganzer, director.

● KENNETH PEACH, ASC, "Lassie"* (Jack Wrather Prods.) with Jon Provost and Jane Lockhart. Lesley Selander, director.

● ROBERT PITTACK, ASC, "The Millionaire"* (Don Fedderson Prods.) John Peyser, director.

● CHARLES STRAUMER, "The Texan"* (Desilu Prods.) with Rory Calhoun. Les Goodwins, director.

MPO STUDIOS, New York City

● ZOLI VIDOR, miscellaneous TV commercials.*

PARAMOUNT

● HASKELL BOGGS, "The Geisha Boy" (Technicolor) with Jerry Lewis and Marie MacDonald. Frank Tashlin, director.

● STANLEY CORTEZ, ASC, "Between the Thunder and the Sun" (Color, Seven Arts Prods.) with Susan Hayward and Jeff Chandler. Russell Rouse, director.

● DANIEL FAPP, ASC, "The Trap" (Parkwood Ent., Heath Prods.) with Richard Widmark and Lee J. Cobb and Tina Louise. Norman Panama, director.

● BORIS KAUFMAN, ASC, "That Kind of Woman" (shooting in N.Y.) with Sophia Loren and Tab Hunter. Sidney Lumet, director.

PARAMOUNT SUNSET

● ALAN STENSVOLD, ASC, "Night Court"* (Sandy Howard Prods.) with Jay Jostyn. Sandy Howard, director.

REPUBLIC STUDIOS

● EDWARD COLMAN, ASC, "Bowling Short"* (Sherry TV Prods.) Robert Leeds, director.

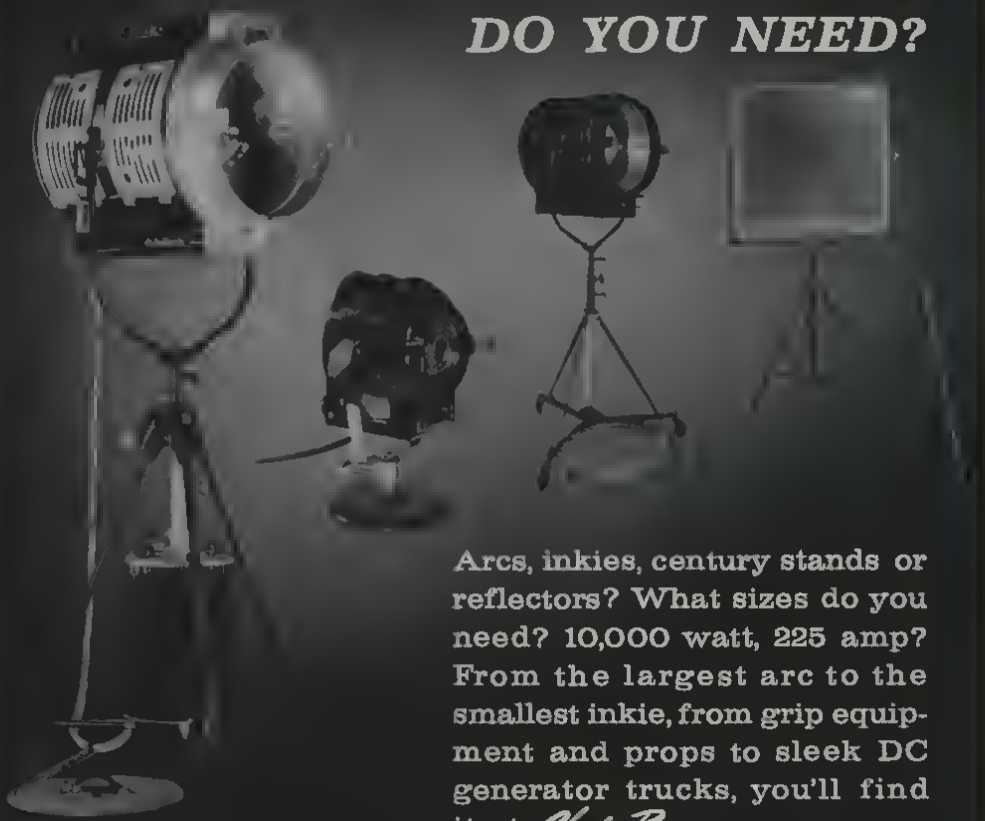
● ARCH DALZELL, "Buckskin"* (Revue Prods.) John Brahm, director.

● BENJ. KLINE, ASC, "Wagon Train"* (Revue Prods.) Various directors.

● H. F. KOENEKAMP, ASC, Schlitz commercial* Mel Dellar, director.

(Continued on Page 502)

WHAT KIND OF LIGHTING AND GRIP EQUIPMENT DO YOU NEED?



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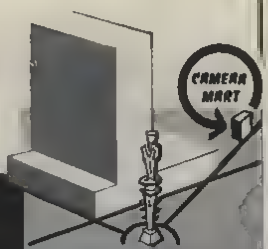

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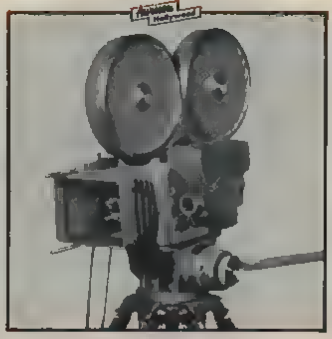

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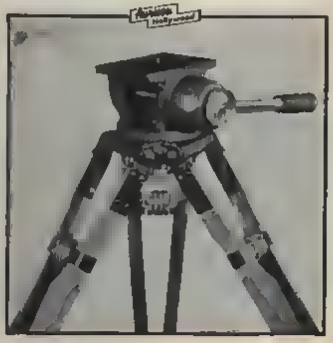

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MOVING SHOT in rain is rehearsed by Tony Curtis and Sidney Poitier as director of photography Sam Leavitt (4th from left) watches. It started with a closeup of the chain, ending on backs of the two men as they fled into the woods

"The Defiant Ones"—Ultimate In Mood Photography

Adverse weather conditions were used to advantage to point up off-beat mood of dramatic escape from chain-gang, photographed in black-and-white by Sam Leavitt, A.S.C.

By ARTHUR E. GAVIN

MOOD, IN MOTION PICTURES, is a visual thing. It is something that is established by the photography and sustained by the photography. It comes through from the screen with the greatest impact when the director of photography has an innate feel for creating mood through artful lighting and camera angles. This, of course, is something which all veteran directors of photography have, each in varying degrees—a talent developed during many years of photographing motion pictures. But, as with any endeavor, now and then one stands out above all the rest.

In "The Defiant Ones," being released this month, director of photography Sam Leavitt, A.S.C., demonstrates this talent in his photography of one of the best black-and-white pictures of the year. Low-key treatment begins with

the initial scene and continues, with only slight and infrequent variations, almost to the very end

In a way, photographing this off-beat picture was something of an artistic sacrifice for Leavitt, and at the same time, an extraordinary challenge, too. And one wonders if actually he did not profit by the overwhelming odds he faced during the filming of the picture—most of which was shot in extremes of cold, rain, and wind—so that in facing up to the challenge he brought about a superior photographic result. But despite all the back-breaking effort put into the camera work, producer-director Stanley Kramer decided to tone down further in the printing the aspect of some of the scenes beyond what was possible to accomplish in the photography. Kramer's aim was to add still further emphasis to the stark, cold and unfriendly atmosphere that prevails during much of the picture.

"The Defiant Ones" is a violent and uncompromising story about the defiance of youth and of the individual in our society and in all the world. Its principals, played by co-stars Tony Curtis and Sidney Poitier, are two fugitives from a chain gang, white and Negro, who hate one another's color but are shackled together as they attempt to escape. While it is basically the dramatic story of the savage experiences of two men "running scared," whose mutual hatred is tempered by the realization that they must depend on one another to survive, "The Defiant Ones" boldly reflects the white versus-Negro conflict.

In photographing the picture, eighty per cent of which was location exteriors, Leavitt and his crew, which included operator Al Myers and assistants Robert Hosler and Ralph Ash, took possibly the severest physical beating ever endured by a camera crew. Although the story is laid in a nondescript Southern U. S. locale, it was photographed entirely in Southern California, within a 225-mile radius of Hollywood. Shooting, which began in February, took place during the worst weather period of the California season. From a production standpoint, the weather was made to order, for much of the action detailed in the script takes place while it's raining. The picture opens with a prison van transporting a load of manacled prisoners to a chain-gang location. The van collides with a produce truck in the blinding rain and Curtis and Poitier are thrown free and make their escape. In this brief opening sequence are some of the most effective night shots seen in black-and-white photography in a long time. The lighting is underplayed and highly effective in its naturalness. The incident appears with all the realism of a newsreel account of some important highway happening.

As dawn breaks—and this is the real thing—we see the manacled prisoners, now near exhaustion, still running in an effort to put time and space between them and their pursuers, who by now are assembled at the scene of the accident and awaiting arrival of bloodhounds before starting to track them down.

In the strange and trackless wilderness in which the escapees find themselves, the conflict between white and black smolders and occasionally bursts into flame, providing occasion for character-revealing studies of both men in sharply-etched closeups. Here the challenge for Leavitt was keeping a proper exposure balance for the white man and the colored man appearing together in the scenes.

As the two men press on, they come to a turbulent stream. Crossing it provides the first great dramatic moments in the picture, as white-manacled-to-black inch their way through the swift current in an effort to reach the opposite shore. For these scenes, which were filmed on the Kern river in Central California, Leavitt had a long parallel built out into the water and extending almost half way across the

(Continued on Page 500)

PRODUCER-DIRECTOR Stanley Kramer (white sweater) lines up shot with director of photography Leavitt (right) on Kern River location

TWO CAMERAS set up on parallel over water photographed dramatic scenes of the two chain-gang escapees struggling to cross swift-running stream.

MOVING THE CAMERA raft to new location where swamp scenes were filmed in rain for "The Defiant Ones." Stanley Kramer and Sam Leavitt (rear) land hand with oars

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THE STORY-BOARD virtually becomes the script for an animated cartoon, where the cartoon idea is visualized in drawings and brief notations. Later, it is analyzed for possible improvement. Here, group of Walt Disney cartoon creators discuss ways for "sharpening up" a cartoon idea, perhaps improving it with an additional gag or two

Animated Film Techniques

Part II: Production Preparation

By CARL FALLBERG

LAST MONTH, in the initial article in this series, I pointed out how systematized procedure is absolutely essential in all phases of producing animated cartoons and I also defined the functions of the *story man* and the *story sketch artist*. This month we shall describe the part played by the animated cartoon *director*, and also the very important function of timing and music in cartoon productions.

The director of an animated cartoon, in general, has the same responsibility as the director of a live-action picture. He determines the tempo and pacing of the picture, the staging, screen performances of characters, and coordinates all of the production activities—animation, music, layouts, dialog and sound-effects recording, cutting and color — keeping all of these varied factors under the control of his experience and judgment and directing their functions toward one homogeneous result: the finished picture.

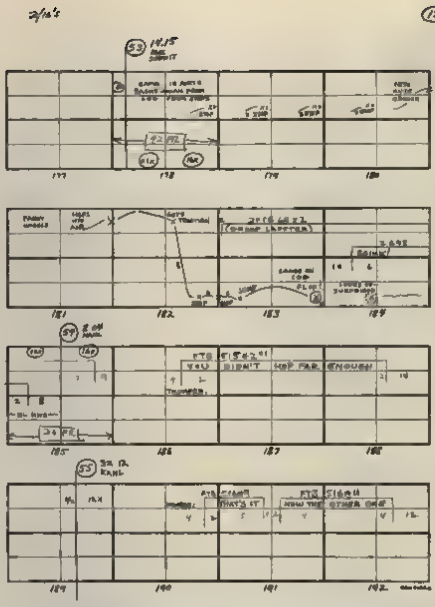
The story man can go only so far in presenting an idea; the director must take this idea and bring it to life as an active, moving piece of entertainment. If it moves badly—if the gags fail to get over, if the animation is uninspired, if the staging and cutting are confusing, if the story pacing is uneven, if the music and color are dull, no one is blamed but the director.

As a rule, the director does not participate in the process of story development before the picture reaches him for production. His contact with the story is only through an occasional story meeting prior to the time he takes over. However, story changes and improvements are liable to occur anywhere along the line during production, for there's no telling when a new idea is going to pop up that's better than one already in the story. But allowances can't be made in time and money budgets for changes of this sort; the story continuity is assumed to be correct when it enters the director's unit. So the director, all through production, is out on a limb—beset by the urge to make changes and improvements but held in check by the uncompromising limitations of the picture's budget.

The director has become fairly familiar with the story before it lands in his lap, and has had his chance to get his two-cents' worth in regarding its development; he really can't blame the story man completely if he isn't getting some funny stuff to produce. While it isn't necessary that he be creative, he should be a good critic of gags and story values and be able to rebuild weak spots if he discovers any during the course of timing the picture.

The ideal condition would be for the story to come to the director so tight, so foolproof and so carefully worked out by the story man that from here on in it's just a matter of animating life into it. The story man generally times his material out with a stop watch, to make sure it will fit into the prescribed footage for a one-reel short-subject — between 600 and 700 feet. However, the story man, no matter how carefully he weighs his material, cannot analyze it as thoroughly as the director, who plans every action to the last frame of film.

The story gets its final, complete working-over when the director starts timing



THE TIMING of an animated cartoon is based entirely on musical beats of varying tempos, according to the pace and speed of the action, and is plotted on "bar work sheets," which are ruled off into squares to indicate beats and bars or measures of music. The one reproduced above was plotted in conjunction with scene in Walt Disney's "Bambi," represented by the sketches at right. (All illustrations © by Walt Disney Prodns.)

it out for animation. He sits down with his stop-watch and metronome, translating every action on the story-board into terms of screen footage. He analyzes these actions carefully, probing deep for any bugs or weak spots—which usually show up in a hurry under his exacting scrutiny. Better ways of staging are uncovered; gags are added to strengthen a story point, or material eliminated that's too long or off the track or disturbing to the overall story pacing. He finds more simple and direct ways to put over business; assuming that the direct approach is the only one. In animation, no false movements should confuse the main line of action, likewise, there should be no false gags or ideas to distract from the main story line.

The axe is ruthlessly swung, if necessary, to chop the overall footage down to the prescribed 700 foot limit, or to trim the story into a simpler form. If it isn't advisable to trim out any business, the director can go through the whole picture and find spots to speed up action just a little faster here and there. Usually, the story man is urged to deliver a

(Continued on Page 504)

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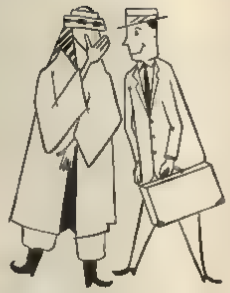

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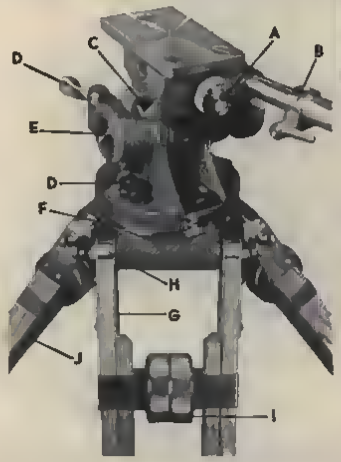

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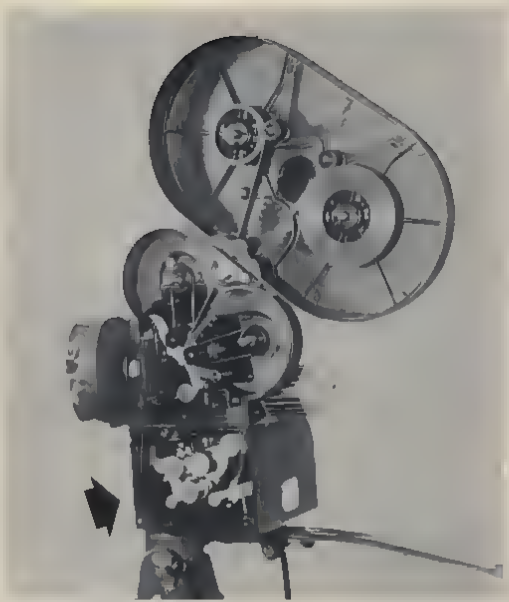
Single-System Sound For The Arriflex "16"

Easy-to-attach magnetic sound recording unit broadens scope of camera for newsreel, documentary and television film photography.

By JOHN FORBES



ARROW POINTS to Gaument-Kalee single-system magnetic sound recording unit coupled to Arriflex 16mm camera, which is fitted with 400-ft magazine. Recording is done on pre-striped film, and sound is 28 frames distant from corresponding picture frame. Doors have been removed from all units to show simplicity of threading.

WHEN THE British Broadcasting Corporation's camera crews flew to Stockholm to film the World Cup soccer series for television, some of the best sound-footage was recorded with an Arriflex 16mm camera coupled to a Gaumont-Kalee "1690" magnetic sound recording unit. Only recently introduced in America, the G-K recording unit promises to greatly expand the scope of usefulness of the Arriflex 16mm camera. As pictured in photo at top of page, it is mounted between the Arri camera and tripod head. The film is pulled through the soundhead by the take-up hold-back sprocket of the camera. No other mechanical drive to the soundhead is required.

The equipment is particularly suitable for use where extreme portability, fast operation and reliability are essential factors, as for newsreel work or recording interviews. It is equally suitable where high-performance is of equal consequence, as in the production of documentary, educational, industrial and television films.

The complete system is easily operated by two men—the cameraman and a sound operator. The Arriflex camera with the soundhead attachment forms a compact and well-balanced unit, which can either be operated on a tripod or handheld with the aid of a shoulder-pod. The amplifier normally is carried (on its shoulder-strap) by the sound operator, who for interview work would also handhold the microphone. For other types of work, where the sound operator cannot be in the picture, the equipment cabling can be connected so that he operates at any suitable position between the microphone(s) and the camera. The only connection between the camera and the amplifier is by means of a single flexible light-weight cable.

The 2-channel recording amplifier unit

(Continued on Page 499)

AMPLIFIER UNIT in leather carrying case with lid removed to show control panel and easy-visibility of volume meter.

IN TYPICAL one-man operation, cameraman wears monitoring headphones and carries amplifier strapped to body, affording ready-access to controls.

ONE OF the big hits at the fair is the Czechoslovakian seven-screen system, "Polyecran," in which live action is integrated with projected motion pictures

Circular theatre at Brussels Fair where crowds queue up all day long to see Circarama movies

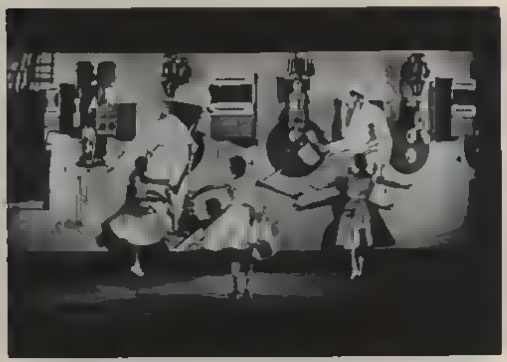
MOVIE SYSTEMS IN THE FUTURE

Some new and interesting innovations in film presentation revealed at the Brussels 1958 Exposition.

By ALINE MOSBY

EXCLUSIVE FROM BRUSSELS

A LIVE DANCER performs on stage in front of a CinemaScope screen in the "Magic Lantern" revue in the Czech Pavilion. Image of tiny ballerina at left is projected on the screened scene by a second projector.



IN THE CZECH'S 24-act, two-hour show, the life and works of the Czech's are illustrated in motion pictures enlivened by live dancers performing simultaneously on stage

BESIDES SPUTNIKS, souvenirs and prize cows, the latest methods for exhibiting motion pictures were unveiled by the nations of the world at the 1958 Brussels Exposition.

Nearly every pavilion at the fair has a movie theater for the exhibition of documentary "travelogues" relating to the beauties and accomplishments of its country.

These theaters are fascinating to movie fans because of the unusual projection techniques—you can see movies on the floor, on the ceiling and even all around you.

Czechoslovakia's two unique movie systems are among the big hits of the Exposition. The Czechs, in fact, display what could be a major, exciting change in show business—live action combined with motion pictures. And in the Czech pavilion tourists also can view a film projected on eight separate screens—a fascinating, artistic system called Polyecran.

The Italians present Aviorama on three big screens—one at the feet of the audience, one on the ceiling, one at eye level. The Americans did that one better with Circarama, a screen in a complete circle around the spectator.

The Russians reveal their wide-screen system, Panorama, for the first time outside Russia. The American Cinerama also is on display in the Amusement Park section of the fair.

The Belgian Congo Pavilion movie is shown in a complicated medium called Congorama.

Many of these systems, U. S. tourists agree, would be lively additions to the entertainment world if used in special productions on Broadway in New York or in other large cities.

Here is a more detailed description of these unique systems:

Czechoslovakia. Every day fair visitors jam the Czechoslovakian Pavilion for a free, 24-act, two-hour show called "The Magic Lantern." The revue tells about the life and works of the Czechs, from their schools to their scenic wonders.

Most of these scenes are in a motion picture shown on a Cinemascope screen. But now and then the film is linked with live actors who perform on a stage in front of the screen.

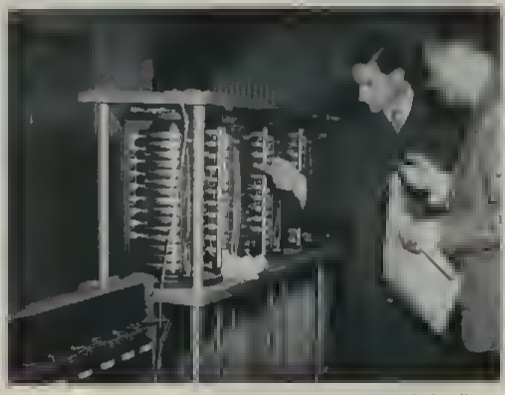
For example, the narrator for the show is a pretty Czech actress, Sylva Danickova. The Czechs ingeniously solved the problem of what language she should use. Belgium has two national languages, French and Flemish. The Czechs also are conscious of the American tourists. So Miss Danickova became triplets. She appears at the same time, via film, on two long narrow screens that flank the Cinemascope screen. In one she speaks French, in the other Flemish. Then the real-life Miss Danickova steps out on the stage in person to speak English and chat with her two filmed selves.

As the film unfolds on the screen, a pianist suddenly appears on the stage via an ascending platform to augment the screen presentation with his keyboard artistry. Later, when an orchestra is shown on the screen and the pianist accompanies them, we see that the orchestra is composed of multiples of the same man—the versatile pianist on stage—who is shown, through trick photography and optical printing tricks, playing every one of the instruments. Live dancers also perform on the stage in conjunction with the film.

But the most applauded scene is the unusual dance of a man on the stage while behind him on the screen you see the filmed mountains of Czechoslovakia. Then superimposed over the mountains, via a second film projector, is a tiny figure of a dancing ballerina. Suddenly the live dancer picks up a large white disc and "catches" the projection of the ballerina on it. As he moves about the

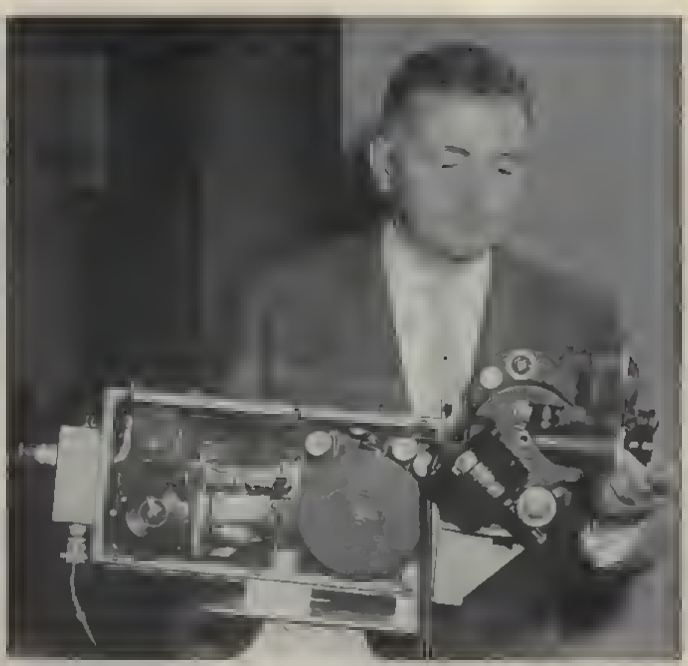
(Continued on Page 508)

CONGORAMA THEATRE, part of the Belgian Congo Pavilion at Brussels, is decorated with illuminated models of native gem stones illuminated map at rear slides back to reveal projection screen on which movies, integrated with the program, are projected at intervals



ELECTRONIC CONTROL center, through which all the various phases of the Congorama show are automatically operated, is inspected by its inventor, Albert Ducreq and an assistant.

ARTIST'S RENDERING of interior of the Circarama Theatre at the American Pavilion in the Brussels World's Fair Audience, surrounded by segmented circular screen, watch scenes projected by eleven separate projectors in sync. Each machine projects on the screen-segment directly opposite.



CHARLES N EDWARDS, Fairchild Camera and Instrument Co. engineer, demonstrates company's Thixotrol processor coupled to an Eyemo camera. Film is processed as fast as it comes from camera and can be projected on a screen seconds later.

Fastest 35mm Film Processor

Piggy-back Thixotrol processor is coupled to camera, develops film as fast as it's exposed.

By JOE HENRY

CONSIDERING THE MANY new and interesting fields to which motion picture photography is being applied, it was inevitable that someone would eventually come up with a system of producing a completely developed motion picture film seconds after exposure in the camera, just as still pictures are being produced today with the Polaroid-Land camera. Such a system could be highly beneficial in the production of spot news films for television newsreels, check films for race tracks, not to mention countless applications in the fields of science, missiles, and aircraft where the need for a projectionable film record of an operation, test or event is required in the shortest possible time following its occurrence.

Nearest thing to Polaroid-Land camera simplicity in motion pictures is a current development of Fairchild Camera & Instrument Company, Syosett, L. I., New York, in which 35mm film can be processed faster than a camera can expose it. Charles N. Edwards, Fairchild engineer, who has developed the equipment, recently showed the progress being made in the company's Thixotrol (monobath) film processing devices.

The Thixotrol processor now under development, which derives its name from the amazing processing chemical principally responsible for its efficiency, has been designed to attach to a motion-picture camera and subsequently process its film at the same rate the camera is operating. Using reversal film, immediately after the film proceeds through the processor, it then can be projected.

The unit, shown being operated by Edwards, in the photo (left) is attached to an Eyemo "Q" camera that has been modified with a slot and light-trap to permit the exposed film to proceed into and through the Thixotrol processor, which is contained in a compact metal case. The latter is mounted on a tilt-head, properly balanced to insure ease in handling the camera during shooting.

Said to be the smallest and lightest film processor in existence, the Thixotrol unit can process 500 feet of film per minute or it can be regulated to process at a slower rate. Weighing only about 3 pounds, it occupies approximately 12 cubic inches of space.

Primarily designed for Air Force use, the "breadboard" model of the processor has already been tested and approved by the AF and acclaimed "very satisfactory." Because it can process and project "inside of seconds," it will afford valuable target information which then can be evaluated while the plane is airborne.

Operation of the processor is initiated immediately after the camera begins feeding film to it. In effect, the processor becomes the camera's takeup spool. As the film passes over the optical axis, it is guided through a slit opening in the processor. The viscous Thixotrol chemical—which is packaged in a small throw-away container—is then forced on to the exposed film in a thin even layer through slight pressure exerted in the container. At the same time, the processed film is "sandwiched" by a transparent Saran cover—the Thixotrol, having a consistency of heavy axle grease, acting as the adhesive agent. Now processed and properly sealed, it can either be projected or fed into the takeup spool.

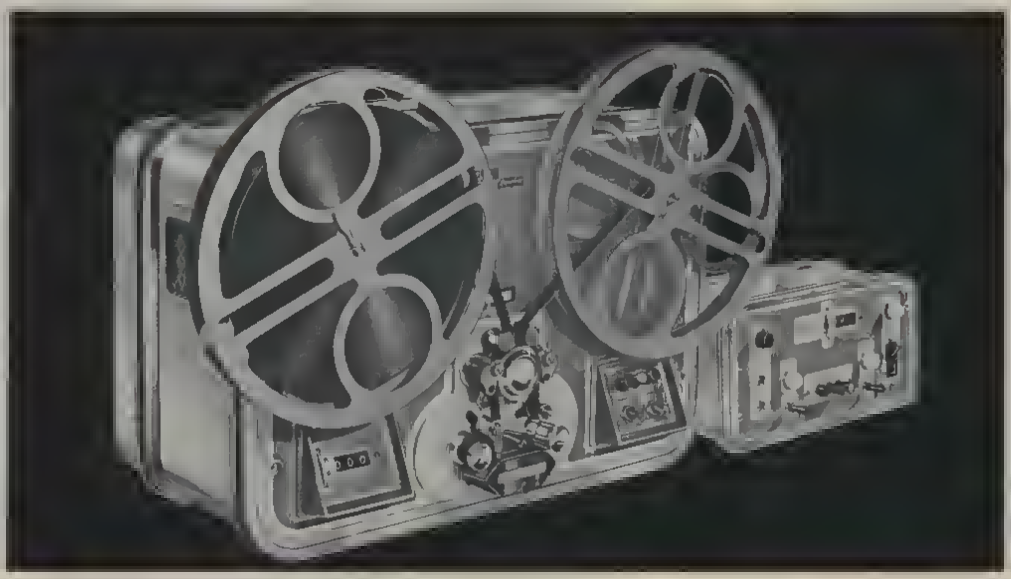
Or, instead of the film rolling up, it can be immediately projected onto a screen in a matter of seconds after the

(Continued on Page 514)

THE MAGNASYNC

MARK IX

magnaphonic sound system



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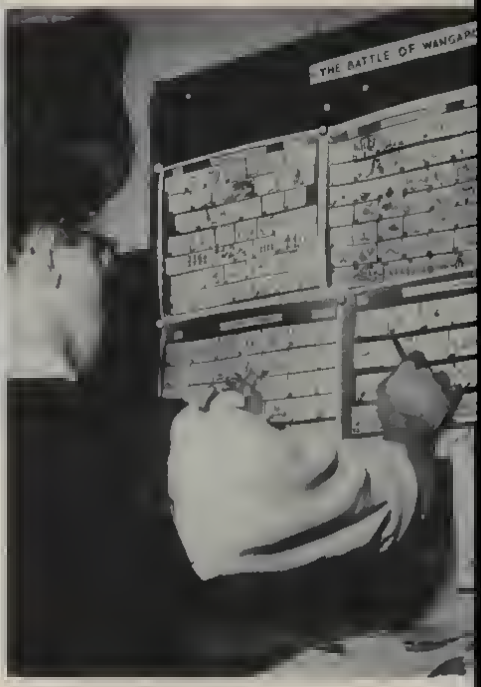
PRO ↑

NEARLY ALL big-budget feature films are "visualized" in advance as an aid to art direction, costuming, establishing characterizations as well as to set the pattern of photography. Here art director Franz Bachelin prepares some of the visuals for "War and Peace."



AMATEUR →

BRITISH CINE AMATEUR John Doherty prepared professional-like story-board sketches for his ambitious, prize-winning production, "The Battle of Wangapore."

Streamlining Production With "Picturized" Scripts

How the amateur movie maker can utilize the professional's method of "visualizing" a picture before starting to shoot, thereby improving the quality of his films.

By ALVIN D. ROE

WHETHER YOUR drawing skill is limited to simple doodling or advanced to where you are considered a pretty fair sketch artist, you can apply your drawing talents to advantage to "visualize" your movie scripts in advance of shooting.

Almost every creative effort—from making a gadget in the basement workshop to building a home—begins with a simple sketch of what the builder hopes to create. By thus visualizing the idea in advance, its shape can be studied, altered and improved, or certain features discarded. Result is a better product without having to stumble through costly trial-and-error procedure.

Visualizing movie stories in advance of filming long has been accepted practice in the studios, and more and more serious amateur movie makers have taken up the idea with consequent improved results in their picture making.

The written script—carefully planned in advance—is essential, of course; but if you can *illustrate* just what you have in mind at the time the thought is fresh in your mind, you have a better chance of translating the essence of that thought to film when it comes time to shoot the picture. It is primarily for the serious amateur movie maker, therefore, that the procedure and advantages of script "visualization" is explained here.

The value of this procedure is not only from an aesthetic sense, but also from the more practical standpoint of economy. The extra thought that goes into the planning of a script for production by means of sketches pays dividends by lessening the necessity for protection shots, retakes and added scenes.

This economical appeal of the sketch method should elicit response from the amateur as well as Cine club production units whose film budgets are usually pretty limited. Making a scenario picture with untrained actors, the amateur film maker is lucky if he can hold his shooting down to three times as much footage as will appear in the finished picture.

Of course, there are always those who shoot one take of a scene and let it go at that. Any conscientious care in script-planning is wasted on such shooting methods, just as a 35mm quickie production with an eight-day shooting schedule would hardly warrant the extra time and thought necessary to sketch up a script.

There probably are isolated geniuses among amateur film-makers who can cut and edit their picture as they shoot, relying on some fine, freak instinct to keep the film coherent. But they are the exceptions, not the rule. It's better to be safe than a genius, especially when you can't be sure that you really are one.

Since the amateur is usually his own writer, producer and director, he must necessarily be a jack-of-all-trades even to the extent of building sets and doubling in brass as a juicer, costume designer and script girl. All the more reason why, with all this to keep on his mind, careful planning should enter into preparing his picture for production.

The script should be looked upon as a blueprint for the production, a chart, a guide-book to keep your wandering feet on the narrow path of cinema consistency. There is no reason why the script should not be given the same amount of care and thought in its planning that an architect gives his blueprints or a cartographer his maps. Motion pictures are no different from any other form of endeavor in the sense that the more careful the planning, the better the result.

This doesn't mean to tie yourself down absolutely ironclad to what's down on paper when shooting starts. A picture should be in a fairly flexible state of creation all during production—within limits. Even such a tangible article as a building is subject to a certain amount of compromise with new and better ideas that spring up during construction.

Much can be said in favor of a picturized script, very little against it. About the only disadvantage to the method is the additional time and energy it requires to make it.

Too often the planning of a set-up or camera angle is put off by the amateur when the script is being written, with the lame excuse: "We'll work it out when it comes time to shoot it!" Such reasoning invariably leads to wasted film and time. Even though camera directions are indicated in the typewritten script, there's still the problems of character-size, directions and camera angles to be considered. Deciding these problems in advance and incorporating them in the visualization sketches saves a lot of headaches later.

Among the illustrations for this article are reproductions of two pages of sketches from a picturized script prepared for an amateur 16mm "western." In this case, a typewritten synopsis of the story was developed first, along with suggestions for cutting. But instead of going ahead with shooting from this point, another step was taken and each scene-cut in the picture was sketched and arranged in rows on standard loose-leaf sheets of script paper. This picturized script—actually a miniature story-board—supplemented the typed script. All the key scenes were sketched, with sizes of characters indicated, direction of character movements shown, and all camera moves plotted. Shooting then became just a matter of following the sketches—with allowances

(Continued on Next Page)

26.
17 Andy pours Homer a drink
Gets friendly. Homer responds cautiously.
Andy looks over at stage
Double-take at what he sees
18. Juggler at work
19 MCU Andy with evil grin pulls out gun.
20. CU-Juggler
21 CU Andy drawing head
22 Bartender makes big take!
23. Two-shot Bart'r on cross in, takes 19 Andy put gun away.
Andy grudgingly gives in
Turns to Homer they toss off another drink

TWO PAGES (above and below) from "picturized" script for 16mm amateur motion picture. Key action, sketched and arranged in story-board order on paper, brings original ideas intact to director and cameraman when it comes time to shoot.

38
88 Bandit takes careful aim - fires
89. Detective hit in left arm. Stumbles forward
90 Dolly chek'or of Homer's reax on fgd
91 c.u two shot bet. looks at arm ardedly, cussing.
Pans around rock, to get head on bandit
92 Bandit, certain he has got detect., starts to back away slowly.
93. MS Detective fires
94. Bandit hit in head, drops gun
Falls backward and over edge of cliff
95. Upshot of cliff Bandit falls over toward camera
Lands in fgd, rolls up into camera
Pan slowly back up cliff betwen and Homer come into view, look down Hold and FADE OUT.

PICTURIZED SCRIPTS

(Continued From Preceding Page)

made, of course, for the "flexible state of creation" which governs all motion picture filming.

No great artistic ability is necessary in order to work out little sketches such as these. Actually, all one needs to do is draw those simple little "match-stick" figures that almost anyone can scratch out with a pencil on paper—with circles for heads and a simple oval for bodies. Where the character is a woman, a rough idea of a skirt can be pencilled-in. If it's a man, pants, naturally. The direction in which the character is looking can be shown without much difficulty by placing two dots for eyes on one side or the other of the circle head. The simpler, the better. After all, the sketches aren't for public display as works of art. They're for your own benefit. About all you have to worry about is the size of characters with relation to the frame size, and the directions in which they face or move. Forget about background details in the sketches, except for those essential details that affect the action, or perhaps a few perspective lines to indicate the desired camera angle.

Keep the sketches small, so several can be included on a script page. About 2 inches wide by 1½ inches high is a good rough proportion for the camera field (sketch size). To facilitate consistency in size and orderliness, cut a stencil or template out of cardboard and use it to trace outlines or frames for the sketches. Line them up across the page like a comic strip and allow enough space underneath each for typing or writing in brief scene and action descriptions and scene numbers. (See examples illustrated.)

Any panning or dolly action and the movements the characters are to take in and out of scenes should be indicated by red arrows. Where certain scenes in fairly close continuity are to utilize the same set-up or background, they should be so identified. For example, if scenes 67 and 69 require the same background or locale as scene 62, this can be indicated by the abbreviation "s.a." (for "same as") thus: s.a. 62. In this way, all three scenes can be shot in one camera set-up, eliminating the need to revisit the locale for purpose of shooting the additional scene or scenes.

All this may sound like a lot is being made out of small details, but it all adds up to a more orderly and business like way to shoot a picture.

If you have something of the artist in you, a lot of pleasure can be had out of planning interesting compositions or "arty" camera angles. If you are so inclined, you can even shade the sketches and try working out lighting effects—mood stuff, you know.

Makers of professional animated cartoons utilize the sketch method of preproduction planning more, perhaps, than any other field of film production. (See page 488, this issue.) The method has been used to develop animated cartoons ever since the days of "Gertie the Dinosaur." Every scene-cut, camera move and bit of business is sketched in careful detail by the animators, then arranged in order on a story-board for study. Just as cartoon storymen have been trained to think in terms of pictures—having found this the quickest, easiest and clearest way to present an idea—so, too, the amateur and 16mm professional film-maker can apply the same logic to their live-action film planning and production.

Story visualization and use of the story-board form of script preparation is not the sole province of the professional; he only discovered and perfected it. For the amateur, with a desire to create serious, entertaining motion pictures, it is an important step toward professional procedure—one that is certain to improve the quality of his pictures and further their award-winning possibilities. ■

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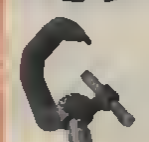


SOUND FOR ARRIFLEX "16"

(Continued from Page 491)

contains not only the recording amplifier with an input mixer for two microphones but also a bias oscillator, monitoring amplifier (for headphones audio monitoring off either the input or the film) and a volume indicator drive amplifier. The circuit employs a total of twelve transistors, which derive their supplies from a 7.5 volt battery housed inside the amplifier chassis. The battery has an operational life of approximately 30 hours. The control panel is fitted with 2 input volume controls, 1 master gain control, and 1 "speech/music" frequency response control switch.

The picture and sound qualities obtained with the combined units are of high professional grade, and compare closely with that obtained with more elaborate and costly studio equipment.

Setting up takes only a few minutes. Camera and amplifier may be operated close together or up to 60 feet apart. Microphones can be satisfactorily used up to 120 feet from the camera, or as near to the amplifier as four and one-half feet. The amplifier will take up to two microphones, using separate mixing and a main gain control. High-quality headphones for monitoring enable the operator to listen either direct to the sound being recorded or — with only 1/24th second delay — to the sound which has just been recorded. Sound is recorded on the magnetic-striped picture film at the correct 28-frame distance for synchronization.

It should be noted that the complete assembly will not fit within the standard 16mm Arri blimp, nor can the latter be modified to take the soundhead. However, it has been determined that under average open-air conditions the camera noise is barely appreciable at distances beyond 20 feet from the microphone, particularly in the presence of other low-level noises or when a microphone with directional properties is employed. Also, a simple improvised fabric "jacket" blimp will provide a noise reduction of approximately 5 decibels.

With the recording unit coupled to the camera, the camera's governor-controlled motor runs at correct sound speed without manual adjustment, and reaches operating speed very quickly after starting, avoiding delay and film-waste. The camera motor is powered by a standard lightweight 8 volt battery.

The Arriflex 16 camera requires only slight modification to receive the soundhead, which can be removed quickly whenever the camera is to be used for silent shots. Modification of the camera consists of cutting a small rectangular aperture in the base to provide access of film to and from the sound unit, and fitting two locating dowels for the sound unit or the shoeplate. Also, a film guide roller assembly, which is furnished, must be mounted inside the camera. Both the sound unit, and the shoeplate, which replaces it for "silent" shooting, are attached to camera by a single coin-slotted captive screw which fastens into the normal tripod bushing in base of camera, and provides a bushing for tripod mounting.

Extreme light weight and compactness has been achieved through use of transistors, and miniaturized electrical and mechanical components. The "1690" soundhead uses single-perforated negative or reversal stock, with 100-mil edge-stripe on non-emulsion side. (type "B" wind only), 100-mil edge track to ASA P. 22.87.

The sync distance is 28 frames; run-up time 3 seconds for music and 1½ seconds for speech. Wow, 0.1% r.m.s.; flutter, 0.2% r.m.s.

Playback delay is approximately 1/24 second. Weight 5 lbs. 8 ozs. (2.5 kilos); dimensions, 5⅛" x 4" x 3⅛", (or 12.7 x 10.2 x 7.9 cms.) The "1691" amplifier has input.

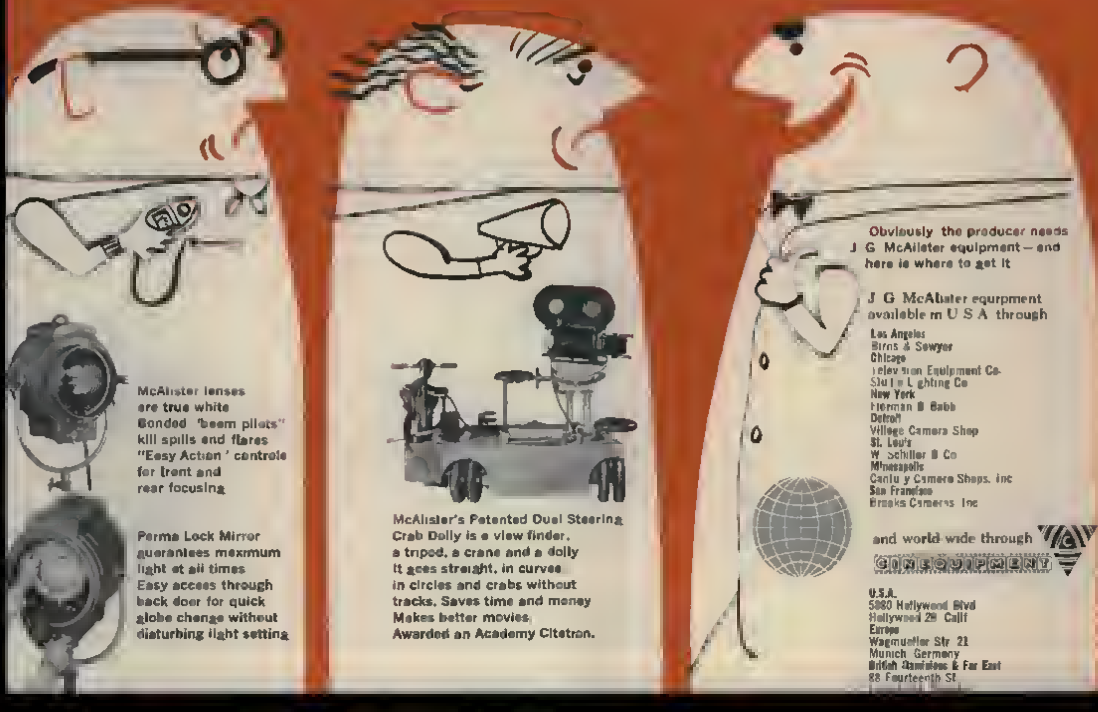
Sensitivity on *Input 1* of 0.1 mV approx., on *Input 2* of 0.03 mV approx.; with maximum Input on *Input 1* of 10

(Continued on Next Page)

"I want lots of white light, the whiter and cleaner the better. Perfect focus, too. And no spills or flares."

"I'd give my Oscar for a completely maneuverable dolly. No tracks. I want freedom for my camera."

"PRO[illegible] I want to ma[illegible] best pictures in the shortest time [illegible] lowest cost."



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The optimum input impedance on *Input 1* is 500 ohms; on *Input 2* 20/60 ohms. Amplifier signal/noise ratio is better than 60 db, under optimum operating conditions.

On both "direct" and "playback" the monitor output is 2 mw into 500 ohms.

When recording is played on a CCIR characteristic reproducer, the frequency response for music is plus/minus 2 db from 100 cs to 8 kcs. Speech frequency response is the same, but with low-frequency attenuation of approximately 12 db at 100 cs.

Bias frequency is 40 kcs approx; battery 7.5-volts (30 hours operation); weight, with case, 4 lbs. 12 ozs. or 2.16 kilos; dimensions 7¾" x 3¼" x 8", (or 19.7 x 8.2 x 20.4 cms.).

When after long usage the magnetic heads require replacement, a new heads-assembly, factory pre aligned and tested, can quickly be installed by the user. The worn assembly need not be discarded but can be returned for reconditioning. Both the sound and picture basic equipment can be augmented by the purchase of a number of optional accessories to increase the scope and application of the equipment.

In the United States, the Gaumont-Kalee recording unit is available from Camera Equipment Company, New York.

ULTIMATE IN MOOD PHOTOGRAPHY

(Continued From Page 485)

stream. Dolly tracks were then laid so that the camera could follow the struggling escapees in vivid closeup as they moved precariously through the water.

Suddenly, one of the men loses his footing and the two are torn from a boulder where they had sought temporary refuge and are carried downstream. Ensuing shots—excellently photographed and skillfully edited—show the men struggling in the raging waters, tumbling over half-submerged boulders, then finally stopped by a tree trunk against which the two have been providently tossed.

Further on in their flight, the rain has increased to cloudburst proportions. As the men slodge along a road in ankle-deep mud, they suddenly hear a horse drawn wagon approaching. To escape detection, the frantic prisoners jump into a clay pit, now partially filled with water, and remain submerged until the wagon passes. Their struggle to climb out of the pit is a classic in suspenseful movie making if not a remarkable accomplishment in photography—done as it was in a simulated rainstorm with water everywhere but actually in the camera. The effectiveness of drab, flat photography is especially effective here, and at the same time the knack of maintaining normal, consistent exposure on the two men of opposite coloring is especially evident.

In their relentless flight, there are many interesting and character-revealing incidents, and through it all runs an incessant feeling of hatred between the two manacled men. Having threatened often to beat each other when they succeed in freeing themselves of the manacles, sheer exhaustion and mounting frustration finally brings about the oft-threatened physical conflict. Swinging hefty punches at each other, despite their chain shackle, they are locked in a death struggle in a thicket when a farm boy, hunting rabbits with a small rifle, comes upon them and orders them to put up their hands. The lad proves friendly and escorts the escapees to his home where his mother, deserted by her husband, struggles to make a living. She provides hammer and chisel to break their shackles and nurses Curtis' wrist wounds, which have become seriously infected.

Here the photographic aspect brightens slightly in keeping with the change of mood, and there are deep accents in light and shadow in scenes in the cabin of Curtis and the woman.

At this point occurs one of the several outstanding photographic treatments in the picture. As Curtis, on a dingy cot in a corner of the one-room farmhouse, awakes from a coma, he starts talking to the woman who had remained beside him and nursed him during the night. His speech is a lengthy one—and the less-imaginative would have treated it in the all-too-familiar pattern of cuts and reverse angle shots. Instead, the camera is centered in a tight two-shot on Curtis and the woman as he begins to talk; then, almost imperceptibly, it dollies toward them, pauses, then begins

(Continued on Page 502)

PRODUCTION DATA
"THE DEFIANT ONES"
Produced and Directed by Stanley Kramer
for United Artists

Director of Photography: Sam Leavitt, A.S.C.
Operator: Al Myers
Assistants: Robert Hosler, Ralph Ash
CAST: Tony Curtis, Sidney Poitier, Theodore Bikel, Charles McGraw, Lon Chaney, Cara Williams
Written by: Nathan E. Douglas, Harold Jacob Smith
Art Director: Fernando Carrera
Film Editor: Frederic Knudtson, A.C.E.
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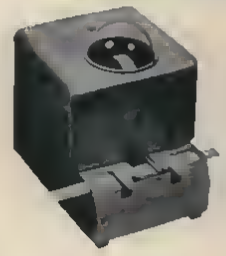

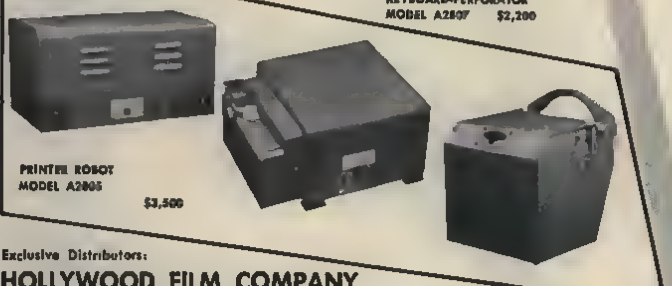

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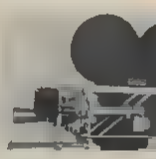

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MOOD PHOTOGRAPHY

(Continued from Page 500)

a slow ascent to a medium high-angle shot as the camera crane is gently elevated—the camera coming to a stop as Curtis ends his statement. Thus, what might have been a lengthy static shot (or a series of cuts) becomes a compelling dramatic camera maneuver, subtlety done, that effects the desired uninterrupted continuity in Curtis' important statements at this point in the story.

Fades and dissolves have purposely been avoided throughout the picture in favor of straight cuts—except where a cut would prove too abrupt; in such cases, a transition is effected by having the player "walk into the camera" to obliterate the scene, or the camera is moved forward to achieve the same effect.

It is in the closing scenes of the picture, where Curtis and Poitier — now freed of their shackles—seem close to their goal of freedom, that the dramatic potentials of imaginative photography are exemplified. After fleeing the farmhouse, the two men reach a nearby rail line where a freight approaches at moderate pace. After almost super-human effort, the near exhausted Poitier clambers aboard a flatcar. Curtis, who was wounded in the shoulder when the farm boy shot him following an argument with his mother, is weak from loss of blood. He nevertheless makes an heroic effort to get aboard the train.

Running alongside, Curtis vainly tries to grasp the outstretched hand of Poitier. Only inches separate their fingers for what seems an interminable interval of struggle. The train is picking up speed. You are right there on that flatcar watching helplessly as Curtis makes one supreme effort to grasp Poitier's hand—so artfully and suspenseful is this sequence of scenes photographed and edited. You are dismayed when Curtis stumbles, just as he grips Poitier's hand, and pulls him from the car, and the two roll down the embankment alongside the tracks, bringing to an end their one hope for freedom.

Limited space must limit description here of the excellent photography of this picture to the more or less outstanding sequences described above, nor have we related the picture's entire story of the prisoners' heroic flight toward freedom—crossing rivers, hiding in caves, sleeping in the open in a pouring rain, breaking into a store for food, being captured and nearly lynched and then jailed and released. But every single moment of this has been photographed with infinite care to heighten and sustain suspense as have few pictures in recent memory.

The picture was photographed on Eastman Plus-X, except for the night shots for which Tri-X was used. Maintaining a quality balance between shots made in rain or overcast with those filmed in bright sun was a major problem for director of photography Leavitt. "A considerable number of the exteriors were shot during actual rainstorms," said Leavitt, "so when the sun came out, we had to compensate for the change in light to maintain uniformity and sustain the mood. When we had to shoot in bright sun, we used a combination of fog and ND filters to tone down the result comparable to scenes that were filmed in rain or overcast."

While Leavitt has photographed just about every type of motion picture that has been produced, from society dramas to rugged westerns, and in both color and black and white, he seems to have unique talent for giving special photographic luster to the gutsy, down-beat type of story—of making the camera produce in dramatic emphasis what the players and dialogue and sound effects cannot do—give a picture visual impact. In this respect, "The Defiant Ones" is an outstanding triumph.

PHOTOGRAPHIC ASSIGNMENTS

(Continued From Page 480)

● LIONEL LINDON, ASC, "Cimarron City"* (Revue Prods.) John Brahm, director, "Alfred Hitchcock Presents"* (Revue Prods.). Arthur Hiller, director. "Restless Gun"* (Window-Glen Prods.) with John Payne. Edward Ludwig, director.

● JACK MACKENZIE, ASC, "Mickey Spillane's Mike Hammer"* (Revue Prods.) Boris Sagal, director.

● RAY RENNAHAN, ASC, "General Electric Theatre"* (Revue Prods.) Don Weis, director.

● JOHN RUSSELL, ASC, "M Squad"* (Latimore Prods.) with Lee Marvin. Don Taylor, director. "Schlitz Playhouse"* (Revue Prods.) Jules Bricken, director.

● WILLIAM SICKNER, ASC. "Bachelor Father"* (Bachelor Prods.) with John Forsythe. John Newland, director. "Schlitz Playhouse"* (Revue Prods.) Don Weis, director. "M Squad"* (Latimore Prods.) with Lee Marvin. Various directors.

● MACK STENGLER, ASC, "Schlitz Playhouse"* (Revue Prods.), John Brahm, director.

● ELLIS THACKERY, ASC, "Wells Fargo"* (Overland Prods.) with Dale Robertson. Various directors. "Restless Gun"* (Window-Glen Prods.) with John Payne. Edward Ludwig, director.

TELEPIX STUDIOS

● FREDERICK WEST, ASC, Opening and Closing of Bob Hope Show.*

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FREDERICK WEST, ASC, Films for Methodist Church*. John Claytan, director.

20TH CENTURY-FOX

● Charles Clarke, ASC, "These Thousand Hills" (CinemaScope & Color) with Don Murray and Richard Egan. R. Fleischer, director

● Wilfrid Cline, ASC, "Mardi Gras" (CinemaScope & Color) with Pat Boone and Christine Carrerre. Ed Goulding, director

● Milton Krasner, ASC, "The Remarkable Mr. Pennypacker" (CinemaScope & DeLuxe color) with Clifton Webb and Dorothy McGuire. Henry Levin, director.

● William Mellor, ASC, "The Diary of Anne Frank" (CinemaScope) with Millie Perkins and Joseph Schildkraut. George Stevens, producer-director

● Oswald Morris, "The Roots of Heaven" (D. F. Zanuck Prods., CinemaScope, DeLuxe color, shooting in French Equatorial Africa) with Trevor Howard, Errol Flynn and Juliette Greco. John Huston, director

● Leon Shamroy, ASC, "Rally 'Round the Flag, Boys!" (CinemaScope & Color) with Joanne Woodward and Paul Newman. Leo McCarey, director

● Leo Tover, ASC, "In Love and War" (CinemaScope & Color) with Robert Wagner and Dana Wynter. Philip Dunne, director.

● Frederick Young, "The Inn of the Sixth Happiness" (CinemaScope, DeLuxe color, shooting in London) with Ingrid Bergman, Curt Jurgens, and Robert Donat. Mark Robson, director

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● Arthur Arling, ASC, Ford and Chevrolet commercials.* Wil Cowan, director; Mercury commercial.* Jack Daniels, director

● Philip Lathrop, "Rawhide"* (CBS-TV) with Eric Fleming. Charles Warren, director.

● Lester Shorr, ASC, Toni commercial.* Wil Cowan, director

● Clifford Stine, ASC, Prom commercial.* Wil Cowan, director

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● Wesley Anderson, "Cheyenne"* with Ty Hardin. Leslie Martinson, director.

● Ellis Carter, ASC, American Telephone and Telegraph commercial.* Owen Crump, director

● Edwin Dupar, ASC, "Lawman"* with John Russell. Leslie Martinson, director

● Carl Guthrie, ASC, "Up Periscope" (WarnerColor) with James Garner, Edmond O'Brien and Joanne Barnes. Gordon Douglas, director

● Russell Harlan, ASC, "Rio Bravo" (Armada Prods., WarnerColor) with John Wayne and Dean Martin. Howard Hawks, director

● Michel Kelber, "John Paul Jones" (Technicolor, John Paul Jones Prods.; shooting in Spain) with Robert Stack, Charles Coburn and Erin O'Brien. John Farrow, director.

● Ted McCord, ASC, "The Hanging Tree" (Technicolor, Baroda Prods.; shooting in Washington) with Gary Cooper and Maria Schell. Delmer Daves, director.

● Harold Stine, ASC, "Sugarfoot"* with Wil Hutchins. Various directors

● Ralph Woolsey, ASC, "Lawman"* with John Russell. Various directors; "Maverick"* with James Garner. Richard Bare, director. ●

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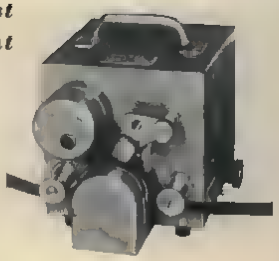

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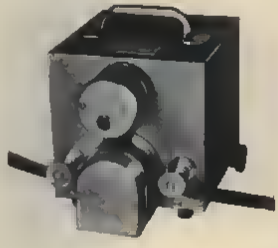

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ANIMATED FILM TECHNIQUES

(Continued From Page 489)

story that is a bit under footage according to his rough, first-hand timing, for invariably the director will require more footage when he goes in for more detailed timing.

Many considerations enter into this timing process. It isn't a matter of simply checking the length of the action mechanically with a stop-watch. Every action has to mean something in advancing the story. The animator must have very definite action outlined to him before he can translate story ideas into tangible drawings. Nothing will appear on the screen that hasn't been drawn. The smallest blink of a character's eye has to be accounted for with carefully executed drawings costing money. There are no ad-libbing performances in cartoons. A live-action director can outline the general idea of a comedy bit to a performer like Red Skelton and leave the actual performance up to Skelton's own judgment and ad-libbing genius. But animators, assistant animators, inbetweeners, inkers and painters can't ad-

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lib their way through a cartoon.

A cartoon director, therefore, is obliged to account rigidly for every bit of story action, breaking it down into definite pieces of pantomime of very definite lengths.

The director starts timing the picture so that every foot of action will be paced to some particular musical tempo. Music is the backbone of a cartoon. The whole effect and charm of animated cartoons lies in the coordination of music and action. Not background music supplementing action, but music working *with* action.

Animated cartoons are a *caricature* of real-life actions and events, differing distinctly from live-action pictures which are a *dramatization* of the same. Music and caricatured action have always been inseparably linked, right up through the history of visual entertainment, starting way back in the gyrations of primitive tribal dances. The ballet, with its terpsichorean interpretations of emotions and actions, caricatures real life rhythmically. If these exaggerations were to follow the indefinite tempo of real life, the effect would be silly rather than pleasing.

Producers of live-action pictures have, in many cases, taken a cue from cartoons, and, like the cartoons, have synchronized background music to fit cer-

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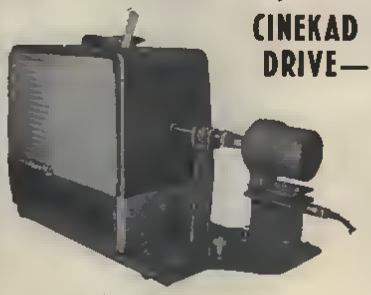

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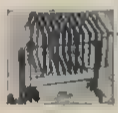

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tain types of comedy actions. They admit it when they call this procedure "Mickey-Mousing." But in this case the music is composed *after* the action is shot. (Except in the case of ordinary dance routines, which do not come under the classification of dramatic action.) Cartoons have the jump on their live-action big brother in the use of music working in perfect sync with action because of the absolute control possible over both of these elements.

There is hardly a foot of film in a cartoon that hasn't music in it. About the only time you'll find a lack of music is under a loud sound-effects pattern, or a line of dialog, in which case the presence of more sound would simply muddy-up the track. But then again, the dramatic effect of certain types of dialog can be heightened by the proper punctuation of music. And often enough, orchestrations have been so arranged as to substitute for sound effects.

The consideration given music in the planning and timing of a cartoon is of the highest. Many directors insist on a musician working in the room with them during the process of timing a picture. In fact, director's units at the Disney studio are called "music rooms." A good story-minded musician is worth his weight in gold. He can open up new possibilities in the staging of a piece of business by suggesting musical themes to work with the action. He can make music tell the story almost as much as the action.

The timing of a cartoon is based entirely on musical beats of varying tempos, according to the pace and speed of the action taking place. The choice of a musical tempo for a sequence of action depends upon the type of action. A fast chase will require a rapid musical beat, a sneak action, a slow tempo, and so on.

From the standpoint of their musical backgrounds, there are three distinct types of cartoons being produced today. In each, music plays a role of varying importance.

In the first type, music plays a part equal to the action in importance. It more or less sets the pace for the action, through the use of rhythm or dance sequences in telling the story. In planning the story, the music is given as much consideration as the action, and the musician will work hand in glove with the director during the timing of the story for animation. All action is designed to follow a definite musical beat throughout. The Walt Disney "Silly Symphony" cartoons were an example. Action, for the most part, will compromise to music in order to maintain a constant feeling of rhythm and tempo throughout the picture.

The second type of cartoon subordinates music to the action entirely. Here action is the first consideration in telling the story, and the music is written later to fit. In this type picture, no attempt is made to make the music a predominant feature, as was the case with the Silly Symphony series, and no dance or rhythm sequences are employed to supplement the story-telling. Most of the old Donald Duck, and Pluto cartoons, and the Goofy series on "How To Ride a Horse," etc., exemplified this type.

In the third type, music governs every factor of the cartoon: tempo, story and action. "Fantasia" was an example of this type, in which the complete orchestration is pre-scored in its final form before production. The story is designed to fit the music, and the animation timing is held to the rigid tempo of the pre-scored music.

In each of these types, the procedure of timing differs, but in general, the problems are the same. In all cases, the action is, in the final analysis, patterned to a musical beat. The only difference lies in the way the musical tempo is established.

It might be well to draw a distinction here between musical tempo and story tempo. Musical tempo means simply the beat of the music. Story tempo or story pacing, implies the rate of the progressive story-points which build to the climax. There is absolutely no relationship between the two, because story tempo—or pacing, as we'd better call it to avoid confusion—is based entirely upon an intangible relationship of story ideas, one to another, arranged so as to maintain and build audience-interest. Musical tempo sometimes supplements story pacing, but cannot make up for the lack of it. No amount of fast action and fast music can revive the audience's interest in the progress of the story once it has lagged due to side-tracking business and lack of directness in presenting story points.

It is a big part of the director's problem when timing a picture to maintain a constantly building pace in the picture. A good director will accomplish this, knowingly or subconsciously, depending on his experience.

A "running reel" (mentioned in the first installment of this series) is a sure check on story pacing. The director will try and get one together as soon as possible, shooting the story sketches, and whatever working layouts the layout-man has had time so far to develop. The sketches and layouts are shot to the lengths indicated in the director's timing, then dialog and sound-effects tracks are organized to sync with the picture. This reel represents the full screen timing of the picture. Then, as the animation develops, it is cut into the picture reel in place of the story sketches and still layouts, and so, piece by piece, the

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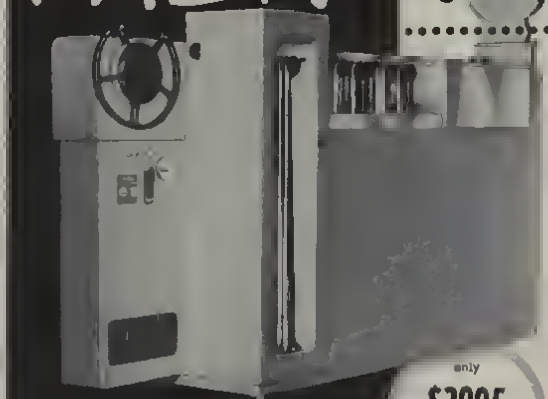

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completed picture is built.

If the picture is a "musical," a piano or organ track is recorded at an early stage of production preparation to set the musical tempo of the picture, and to establish footages. But where there isn't any predetermined music to set tempos the director has arbitrarily to choose the musical beats.

The choice of a musical tempo to fit the action depends on the character of the action—slow, fast, or indifferent. A table of standardized musical beats has been established for cartoon work, based on the relation of the frequency of the beats to the speed that film travels through the projector (24 frames per second). Thus, an "8 beat" means one beat every eight frames of film, a "12 beat," every twelve frames, and so on.

Most action can be laid out on musical beats ranging from a 6 beat, for very fast action, up through a 16-beat. Any of the intermediary beats—7, 8, 9, 10, 11, 12, 13, 14, 15—can be doubled or tripled to fit very slow action. For example, a slow sneak action is timed with the main accents every 32 frames. Thus each measure of music will be 32 frames long.

Where the choice of a beat is purely arbitrary, and not governed particularly by any set action, a "free beat" is chosen. This is usually patterned either at two 12-frame, or two 16-frame beats to each

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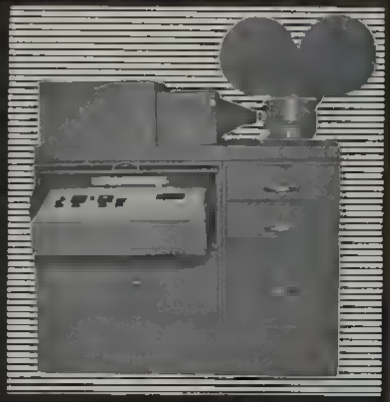

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musical measure. Any combinations of either of these beats will fit most any action, slow or fast. Two-12's can become 4-6's, for fast stuff, or 4-12's, for slow actions. Free beat is most generally used in the second type of cartoon described above, in which the action is set first, then the music.

The standard of measurement in cartoons is film footage. More specifically, time in cartoons is not measured in seconds or minutes, but in terms of the amount of film that passes through the projector at the standard rate of 24 frames per second (90 feet a minute).

An action that takes six seconds to pantomime, will be indicated as a "nine foot" action as it takes nine feet of film six seconds to be projected. In accordance with this, metronomes and stop-watches are marked off in film footage.

The timing of a picture is plotted on paper in the form of bar work sheets, which are ruled off into squares to indicate beats and bars, or measures of music. The length of each measure is marked according to the musical tempo. A record of every technical detail concerning the timing and footage of a picture is kept on these bar sheets. Scene cuts are indicated at the proper places. Dialog and sound-effects tracks are indicated and each "take" carefully marked down as to its starting and stopping point in relation to the measures. Everything is accurately spotted exactly where it will occur in the course of a picture's footage. The bar sheets are the director's bible: a master-record of the picture's progress.

(To be continued)

MOVIE SYSTEMS IN THE FUTURE

(Continued From Page 493)

stage, the image of the ballerina moves on the disc with him.

The film was produced at the Slovak Studio in Bratislava. The male and female dancers rehearsed their dances separately, but using the same general choreography, while the cameraman, J. Novak, plotted their every move. Then he filmed the ballerina, a mask on the camera blotting out the background so that only her figure showed. While she danced, the camera moved on a dolly, repeating the same movements that the male dancer would later make on the stage in the theater.

The effect is startling to the audience and never fails to bring wild applause.

"The Magic Lantern," is the creation of Alfred Radok, the director of the National Theater in Prague. He tried the live-film combination once before, he told me in an interview, about five years ago for his theater. For the Exposition "the process was quite improved." He thinks the live-film idea could be used to combine dances, songs and stories for special theatrical performances.

"I think acting on the stage can be combined with a film to good effect," he said. "For example, I may make a film of just an orchestra and have a soloist come out to perform separately in person. Other details also could be cut into the film, such as dances."

The film section of "The Magic Lantern" has many effective shots. For one, the bottom two-thirds of the screen is blacked out. In the top third, only the feet of some folk dancers are visible. In another scene, shots of famous Czechoslovakian glassware are projected first on a gauze curtain on the front of the stage and, through that, to the Cinemascope screen behind, giving an interesting double-image effect.

Alfred Radok's brother, writer Emil Radok, is responsible for the other fascinating film projection "invention" in the Czech Pavilion, Polyecran.

For this show, eight screens of slightly different shapes are placed in a small recessed stage lined with black. Two of the screens hang virtually from the ceiling, but tilted for good viewing. Two are tilted upward from the floor and the other four are scattered at eye level. The audience sits on low stools to watch the 10-minute performance.

The Polyecran movie is a 16mm documentary film. "Springtime in Prague," that shows the cultural side of Prague—its museums, music, etc.

Instead of editing one roll of film to bring movement, the "cutting" is done virtually by having the action spring from one screen to the next.

In a scene of the Prague Ballet, for example, you see an orchestra on one screen; on another, a ballerina on stage. Inspiring scenes of flowers fill another screen while, for effect, the other remaining screens are black for the time being. Suddenly the dancer leaps from one screen to the next, and finally is "frozen" in the middle of a leap into a still photograph. At times the feet of other dancers flash on the other screens.

The film for this presentation was made as follows: various cultural events of Prague were first documented by cinematographer Jiri Safar under the

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MAKING A MONKEY out of a film producer is one thing, but whoever heard of making a producer out of a monkey? In above photos, Zip the chimp—star of many TV film commercials—ponders producer's role as he monkeys around back of the camera instead of in front of it under watchful eye of Zoli Vidor, ASC, (right, in 1st photo) director of photography for MPO Productions, N. Y. Zip looks dubiously at script handed him by ad agency rep Don Trevor, then checks light contracts through Vidor's viewing glass (center), finally busses Vidor with simian kiss as reward for giving him glamour treatment in the photography of series of Acrilan carpet commercials.

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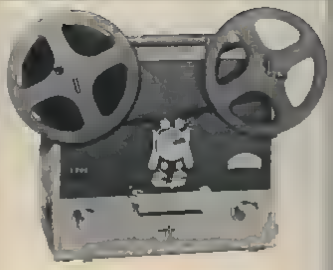

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direction of Emil Radok. The resulting footage was then assembled into eight reels, and carefully edited so that the action moves smoothly from one reel to the next. Some of the scenes are in black-and-white, some in color.

To screen this film, eight projectors were set up above, below and to the sides of the little stage. Augmenting these are three slide projectors which are used to flash still photographs on and off some of the screens in conjunction with the carefully planned presentation. All projectors work automatically—the entire ingenious performance being controlled by electronic equipment monitored by a magnetic cue tape. The projection equipment was developed at the Research Institute for Optics in Prague.

Emil Radok thinks the system is not just a novelty, but can be used commercially with certain types of films. For example, he is making a movie of the Brussels Exposition to be to be exhibited in Prague with the Polyecran system. And while eight screens may surprise Westerners, Radok is thinking of using 26 for a larger theater!

Italy: The Italians' new projection system, Aviorama, invented by Milan engineer Luigi Morelli, goes the wide screens one better by extending the

(Continued on Page 511)

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FUTURE MOVIE SYSTEMS

(Continued From Page 509)

screen in a curve both at the top and bottom.

The spectator looks at three normal-sized screens linked together—one at the usual eye level, one tilted up from the floor, the other tilted down from the ceiling. The audience sits around three sides of the "pit" that holds the floor screen.

Projection is simultaneous from three projectors, as in Cinerama—one being placed on the ceiling, one in the pit and the other in the back of the theater. The effect gives you a feeling of "you are there"—you see the sky, the horizon and the ground in front of you.

A documentary travel film on Italy was made for the Aviorama premiere at the Exposition by director Luciano Emmer and produced by the INCOM company. Three cameras were mounted together on an airplane for the aerial views of Italy.

United States: The U.S. Pavilion has a gimmick that takes the wide-screen craze to its ultimate end—a 360 degree screen that keeps going all the way around the room. This is Hollywood's Circarama system.

Circarama is not "new," having been developed by technicians at Walt Disney studio and first shown at Disneyland, the amusement park near Los Angeles, three years ago. (See *American Cinematographer*, for August, 1955, pp. 476.—ED.)

The Ford Motor Co. Fund paid half of the $400,000 cost to produce the new 18-minute 16mm film on the American scene for the U.S. Pavilion's Circarama theater. To achieve the circular effect, 11 cameras were mounted in a circle and placed either atop a car or on the underside of an airplane.

In the theater, 11 screens, each nine feet high and eight feet above the floor, are arranged in a circle 142 feet in circumference. Eleven projectors then are stationed behind the screens, each projector throwing its image literally through a slit in one of the screens to the screen on the opposite wall.

In the Attractions Park section of the Exposition is a Cinerama theater, not part of the official U.S. display but a concession. This super wide-screen system, familiar in the U.S. since 1949, uses a three-camera unit for photography, three projectors, and a curved 168 degree wide screen.

Russia. The Russian system, Panorama, was shown for the first time in the West here since its debut in Moscow in 1956. M. Grehnev, in charge of Panorama at the Russian Pavilion, explained it was adapted from ideas advanced by the French in 1926 (also said to be the basis for Cinerama), and developed at the Institute of Research in Cinematography at Moscow.

Panorama is virtually identical to Cinerama. The Russian system employs three projectors and three connected screens, totaling approximately 81 by 29 feet, with a curvature of 145 degrees.

As in Cinerama, three cameras were linked together to shoot a one hour-25 minute travelogue on Russia for the Panorama exhibit.

In the Panorama theater in the Russian Pavilion, the projectors are installed in rooms concealed at the back of the theater. Actually six projectors are used, the extra three operating for the last half of the show so that no intermission is necessary for a change-over of reels.

Nine sound tracks are used to feed

(Continued on Page 514)

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FUTURE MOVIE SYSTEMS

(Continued From Page 511)

stereophonic sound to nine loundspeakers. Five are placed behind the screen, three around the theater, and one in the ceiling. An engineer sits at a control board in the center of the theater. He starts the projectors, controls the focus and the loudspeakers and operates the electric motors controlling the curtains and lights.

The Panorama screen is solid in the middle, the sides consisting of thin white plastic strips. The screen can be parted in the middle and moved off the stage to make way for live performers or a regular size screen.

Panorama officials say they already are at work on a second Panorama feature, which will include scenes of China, Moscow's Bolshoi Ballet and the Brussels Exposition. For the latter sequence, Panorama cinematographers filmed scenes of the University of California's marching band that is part of the U.S. exhibition.

A Panorama theater also has opened in Kiev and more are being built in Leningrad and Sverdlovsk.

Belgian Congo: To show a travelogue of its country, the Belgian Congo Pavilion uses everything in the book. First you see a huge map of the Congo that lights up to point out different parts of the country, as the recorded narrator speaks. Now and then it slides back to reveal a movie screen on which is projected one of the many films integrated into the program. Flanking this screen are two small screens for showing other films.

On the ceiling and walls lighted pieces of rock are mounted to illustrate the minerals, etc., of the country. Even the walls of the Congorama Theater get in the act. These are also maps that light up, and they, too, slide back to reveal illuminated stage settings of typical Congo life. To effect the animated lighting effects on the big wall maps requires 5,500 tiny light bulbs plus a vast network of electric wiring.

The entire business—lights, film projectors, sound effects, music, narration, maps and sliding walls—is controlled and operated by an electronic "brain" developed by Albert Ducrocq. Jan Van Overloop, director-general of the Congo Information Bureau, produced the motion pictures that are exhibited in the Congorama pavilion. Pierre Long did the photography.

Surveying all these innovations in Brussels, one arrives at this conclusion: In most of the European countries, electronics, mechanics and super-showmanship are being integrated with motion pictures and live action on stage to produce a new type of theatrical entertainment. In all the displays or systems, however—Polyecran, Panorama, Aviorama, Circarama, etc.—the motion picture is the backbone and the foundation.

FASTEST PROCESSOR

(Continued From Page 494)

picture has been made. Archival quality can be obtained after the film has served its rapid processing purpose by stripping off the Saran covering and washing the monobath residue from the film.

According to Edwards, the Thixotrol processor will have several advantages. He said, "Because of its thick consistency, the Thixotrol chemical will not leak or evaporate at high altitudes. It has been tested at simulated altitudes of 200,000 feet with excellent results. Moreover, since the processor, itself, is very small, there is little danger it will be rendered inoperative by enemy fire."

As to ultimate adaptations for the processor, he said, "Its possibilities are unlimited. Inasmuch as the processing time is practically nil, it can be adapted to TV and motion picture film evaluation besides future missile and advanced reconnaissance programs. Eventually we may even fit it to our own high speed Motion Analysis camera."

With production of the Thixotrol processor, Edwards also announced that Fairchild would provide maintenance services for each unit. In addition, the chemical and film will be offered as separate replaceable items.

IDEA for an instantaneous film processor is not entirely original with Fairchild, it would seem, according to above cartoon created for Houston-Fearless Corp., makers of film processors, by the famous cartoonist VIP and published over a year ago.

In VIP's version, cameraman at window is filming arrival of spaceman on roof of adjacent building. Exposed film emerges from camera, goes to H F processor, thence to assistant who hurries it to projectionist waiting to televise it (it's not explained, of course, what protects film emerging from camera from fogging, etc.)—EDITOR

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